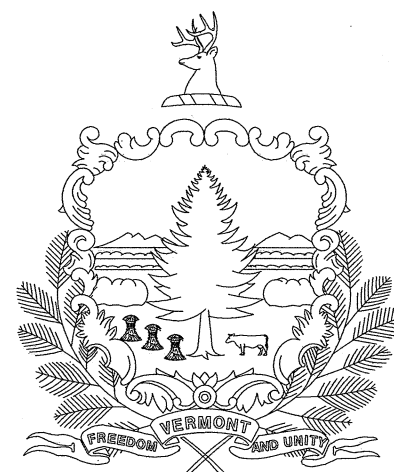
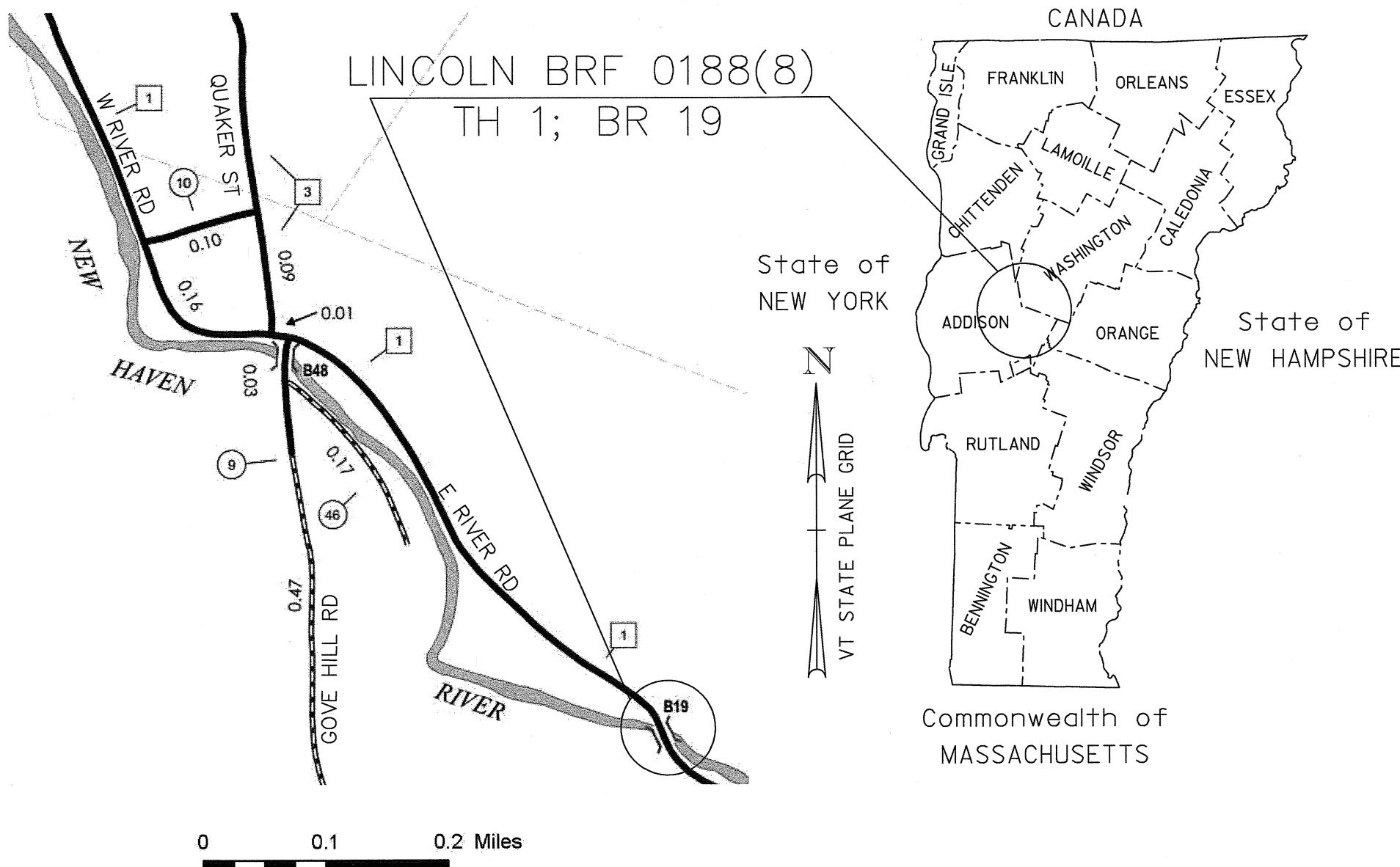


STATE OF VERMONT
AGENCY OF TRANSPORTATION



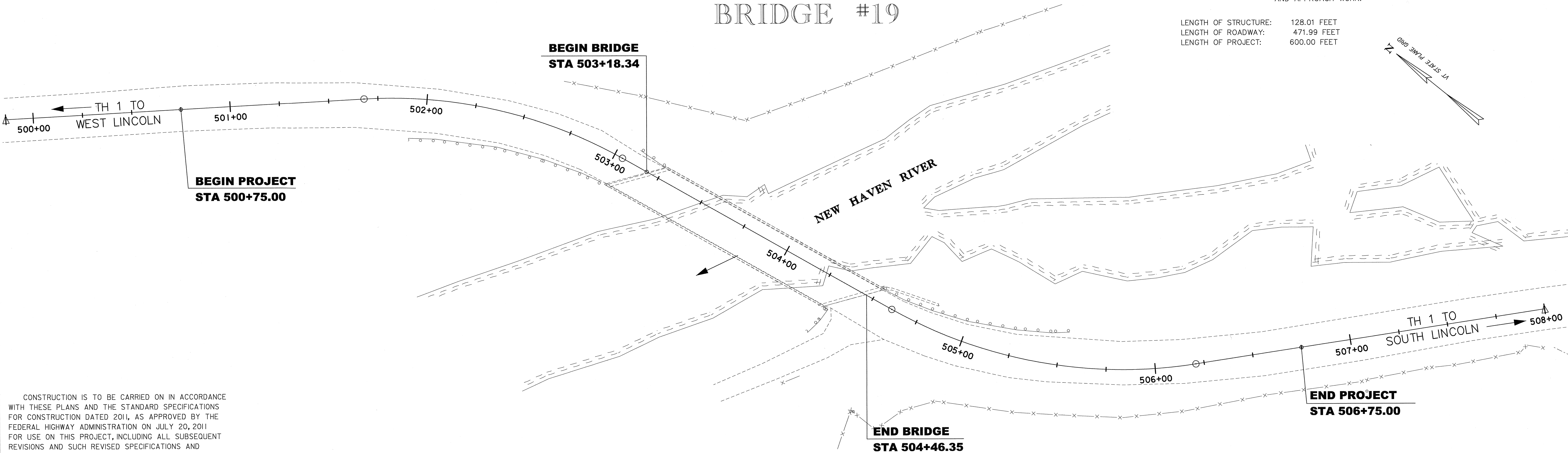
PROPOSED IMPROVEMENT
BRIDGE PROJECT
TOWN OF LINCOLN
COUNTY OF ADDISON
TH 1 (RURAL MAJOR COLLECTOR)
BRIDGE #19



PROJECT LOCATION: BEGINNING AT A POINT ON TH 1 (EAST RIVER ROAD) APPROXIMATELY 0.5 MILES SOUTH OF ITS JUNCTION WITH GOVE HILL ROAD AND PROCEEDING SOUTHERLY FOR APPROXIMATELY 0.1 MILES ALONG EAST RIVER ROAD.

PROJECT DESCRIPTION: REPLACE EXISTING BRIDGE WITH A NEW WIDENED BRIDGE ON AN ALIGNMENT SIMILAR TO EXISTING INCLUDING RELATED CHANNEL AND APPROACH WORK.

LENGTH OF STRUCTURE: 128.01 FEET
LENGTH OF ROADWAY: 471.99 FEET
LENGTH OF PROJECT: 600.00 FEET



CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2011, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JULY 20, 2011 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

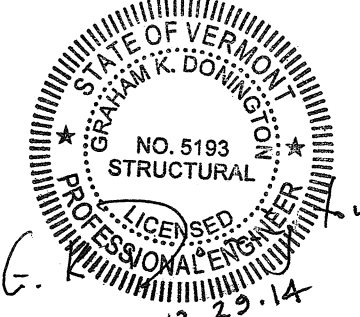
QUALITY ASSURANCE PROGRAM : LEVEL 2

SURVEYED BY : VERMONT SURVEY & ENGINEERING, INC.
SURVEYED DATE : 11/16/2010

DATUM

VERTICAL NAVD 88 (GEOID) 9 FT
HORIZONTAL NAD 83 (CORS) SPC (4400VT) SFT

SCALE 1" = 25'-0"



PARSONS BRINCKERHOFF
650 ELM STREET
MANCHESTER, NH 03101

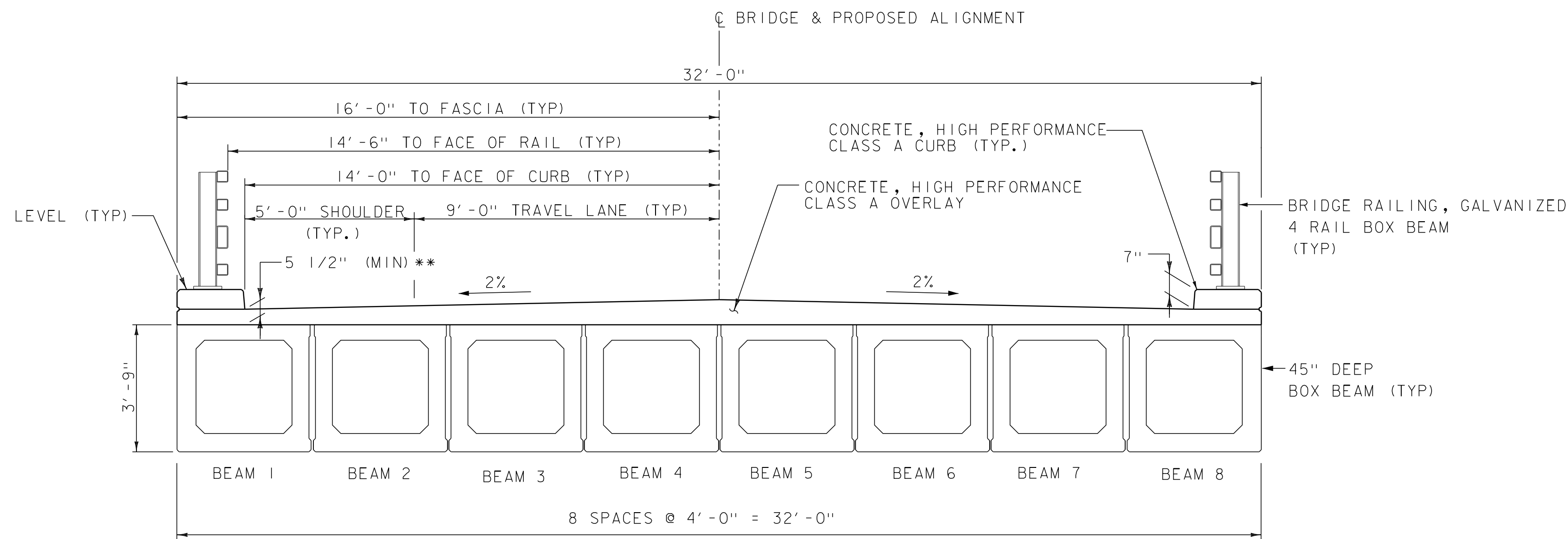
DIRECTOR OF PROJECT DELIVERY

APPROVED _____ DATE _____

PROJECT MANAGER : TODD SUMNER

PROJECT NAME : LINCOLN
PROJECT NUMBER : BRF 0188 (8)

SHEET 1 OF 62 SHEETS



** 5" STRUCTURAL 1/2" WEARING (MIN. @ FACE OF CURB AT MIDSPAN BEAM 1 & MIDSPAN BEAM 8)

BRIDGE TYPICAL

SCALE 3/8" = 1'-0"

1 0 1 2 3 4

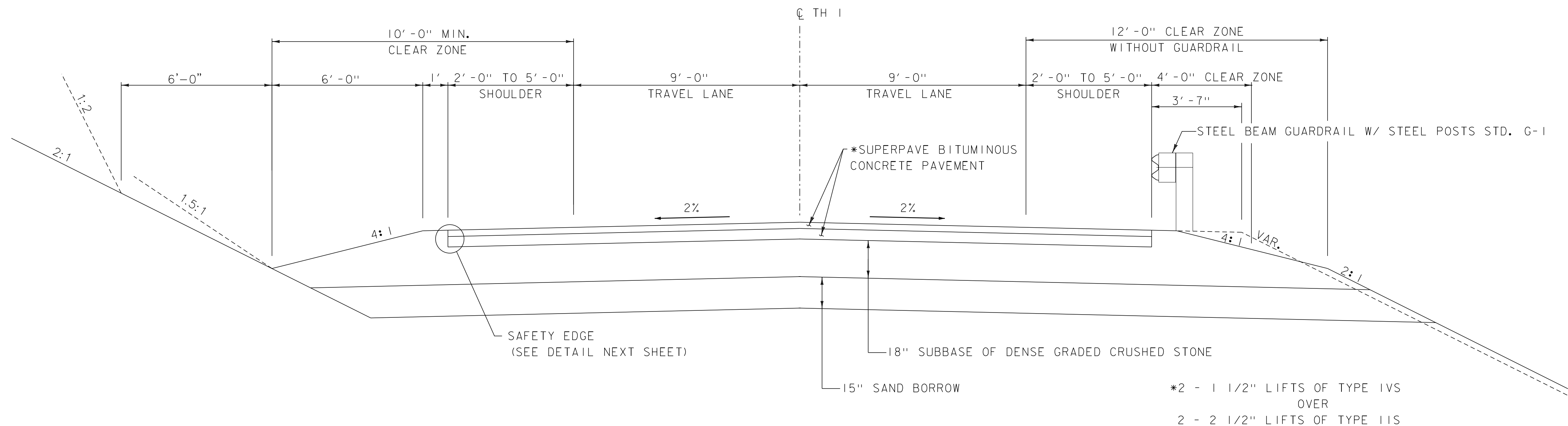
NOTES

MARKER POSTS: TO BE PLACED AS INDICATED OR AS DIRECTED BY THE ENGINEER, ITEM 619.16 STEEL MARKER POSTS.

SLOPE ROUNDING: ALL CUT SLOPES TO BE ROUNDED IN ACCORDANCE WITH STANDARD SHEET B - 5.

TACK COAT: EMULSIFIED ASPHALT IS TO BE APPLIED AT THE RATE OF 0.015 GAL/SY ON ALL COLD PLANED SURFACES AND BETWEEN SUCCESSIVE COURSES OF PAVEMENT AS DIRECTED BY THE ENGINEER.

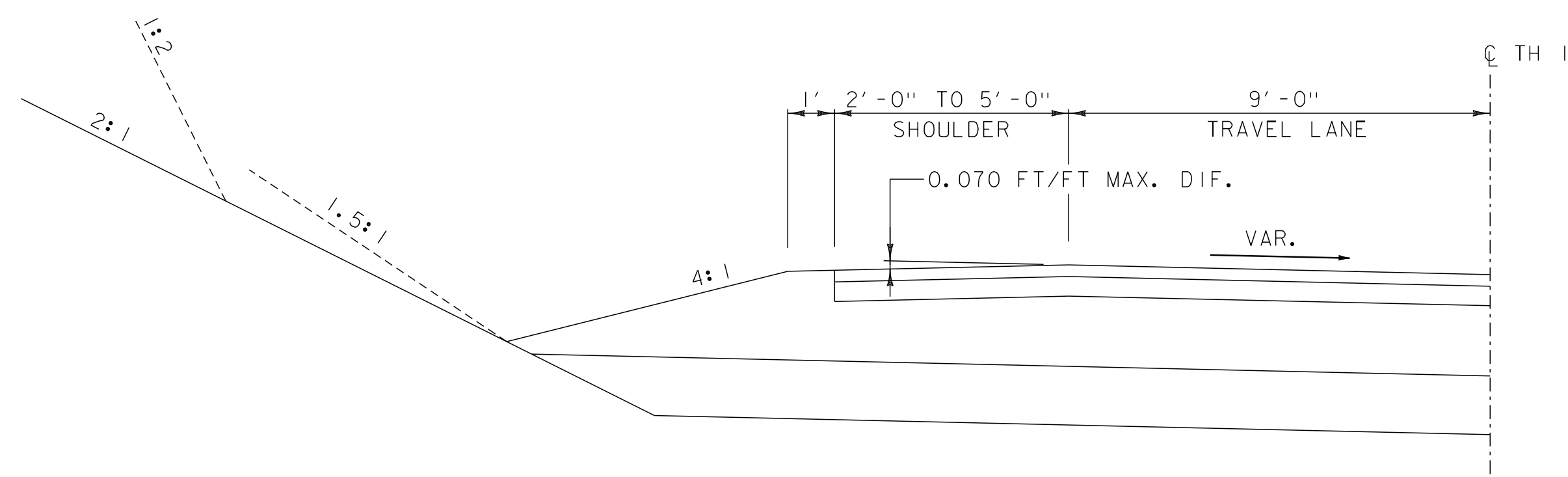
MATERIAL ITEM	THICKNESS TOLERANCE
PAVEMENT (TOTAL DEPTH)	+/- 1/4"
SUBBASE	+/- 1"
SAND BORROW	+/- 1"



ROADWAY TYPICAL SECTION

SCALE 3/8" = 1'-0"

1 0 1 2 3 4



HIGH SIDE OF BANKED SECTION

SCALE 3/8" = 1'-0"

1 0 1 2 3 4

PROJECT NAME: LINCOLN

PROJECT NUMBER: BRF 0188 (8)

FILE NAME: z10j066+typ.dgn

PROJECT LEADER: G.K. DONINGTON

DESIGNED BY: P. ARMANO

TYPICAL SECTIONS (1)

PLOT DATE: 8-DEC-2014

DRAWN BY: W. GERHOLD

CHECKED BY: A. STOCKIN

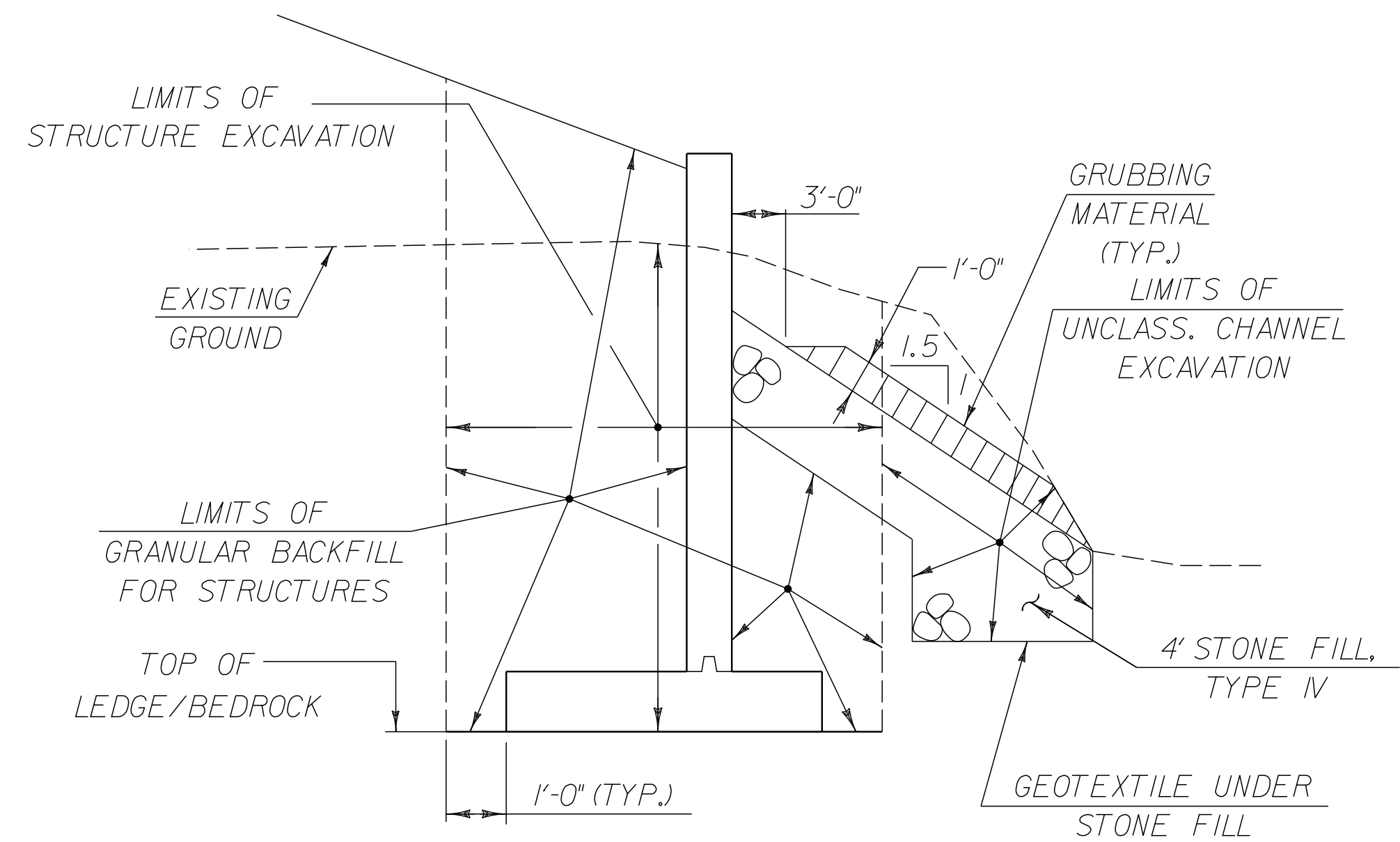
SHEET 3 OF 62



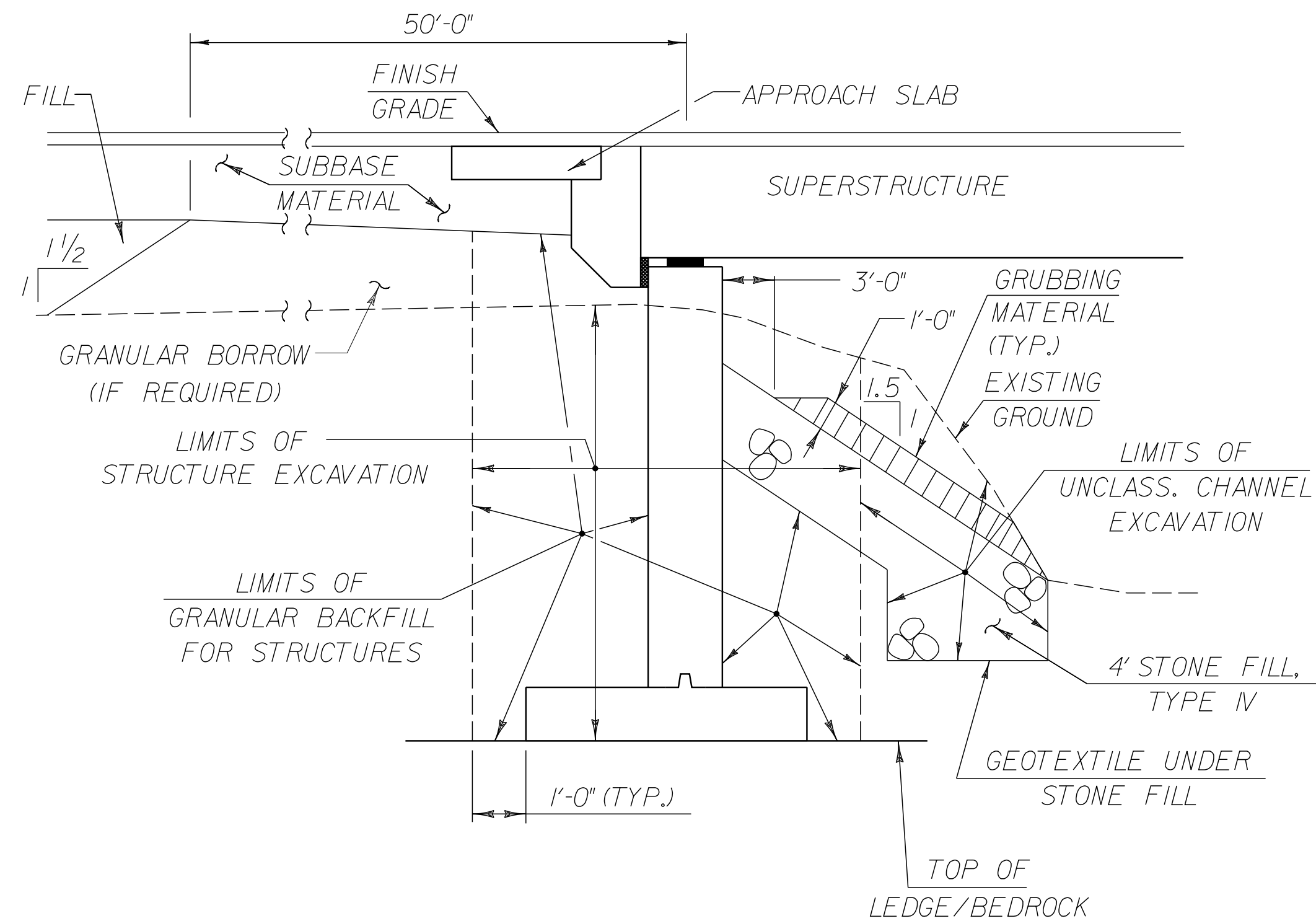
PARSONS BRINCKERHOFF

650 ELM STREET

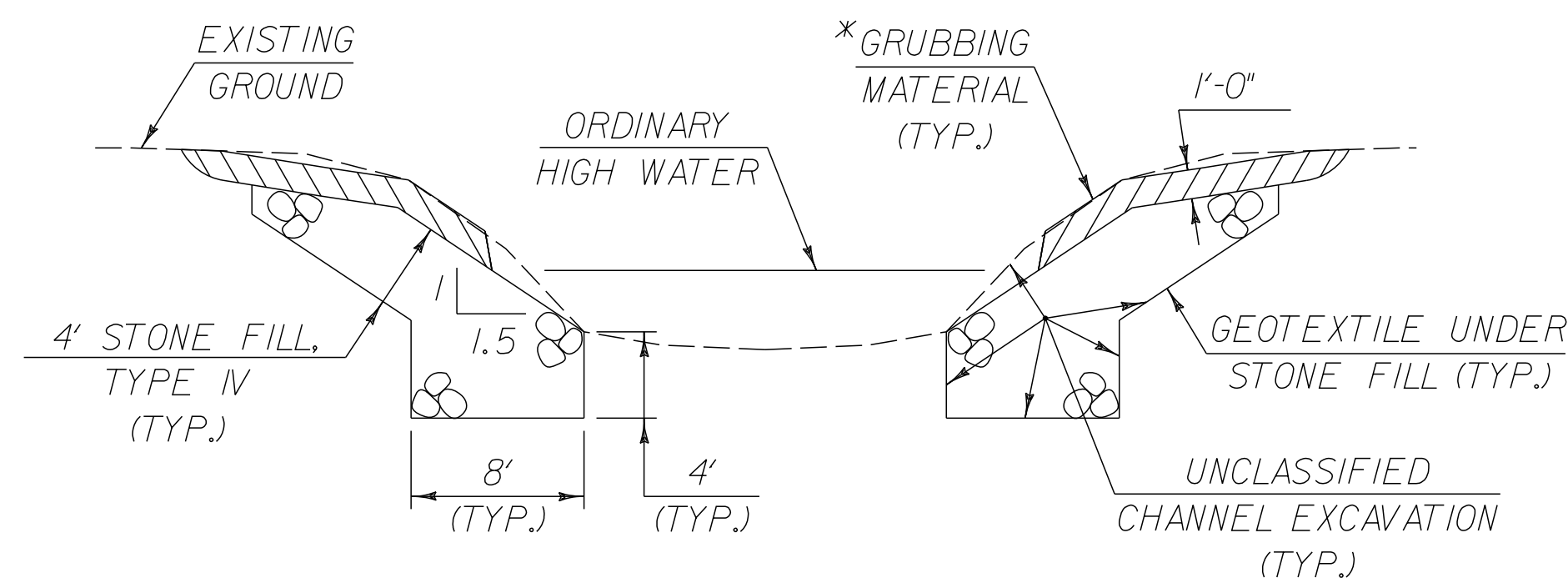
MANCHESTER, NH 03101



TYPICAL WINGWALL SECTION
(NOT TO SCALE)

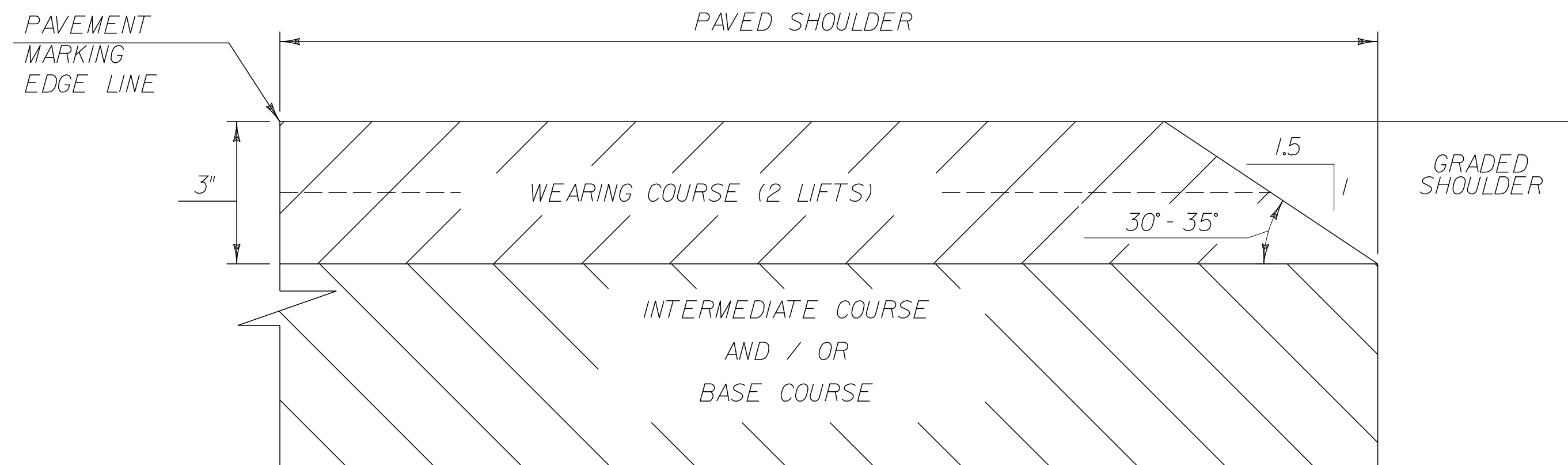


TYPICAL ABUTMENT SECTION
(NOT TO SCALE)



TYPICAL CHANNEL SECTION
(NOT TO SCALE)

*WHENEVER CHANNEL SLOPE INTERSECTS ROADWAY SUBBASE, GRUBBING MATERIAL SHALL BEGIN AT THE BOTTOM OF SUBBASE.



SAFETY EDGE DETAIL
(NOT TO SCALE)

THE EDGE OF PAVEMENT SHALL BE FORMED IN SUCH A WAY THAT THE BITUMINOUS CONCRETE PAVEMENT IS EXTRUDED OR COMPRESSED TO FORM THE 30 TO 35 DEGREE ANGLE. DEVICES THAT SIMPLY STRIKE-OFF THE MIX WITHOUT PROVIDING ANY COMPACTIVE EFFORT WILL NOT BE ALLOWED.

THE PAVED SHOULDER EXTENDS FROM THE EDGE OF TRAVELED WAY TO THE EDGE OF THE WEARING COURSE, INCLUDING THE "SAFETY EDGE".

PROJECT NAME: LINCOLN
PROJECT NUMBER: BRF 0188 (8)



PARSONS BRINCKERHOFF
650 ELM STREET
MANCHESTER, NH 03101

FILE NAME: z10j066typ.dgn
PROJECT LEADER: G.K. DONINGTON
DESIGNED BY: P. ARMANO
TYPICAL SECTIONS (2)

PLOT DATE: 8-DEC-2014
DRAWN BY: W. GERHOLD
CHECKED BY: A. STOCKIN
SHEET 4 OF 62

<div>GENERAL</div> <div><div><div><div><div>1.</div><div>ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION 2011 STANDARD SPECIFICATIONS FOR CONSTRUCTION, AND THE 2012 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS AND THEIR LATEST REVISIONS.</div></div><div><div>2.</div><div>THE BRIDGE IS DESIGNED FOR HL-93 LIVE LOAD.</div></div><div><div>3.</div><div>ITEM 529.15 "REMOVAL OF STRUCTURE" SHALL BE USED FOR THE REMOVAL OF THE EXISTING STRUCTURE (SUPERSTRUCTURE AND PIER) AND ANY PORTION OF THE ABUTMENTS AND WINGWALLS/RETAINING WALLS OUTSIDE THE LIMITS OF STRUCTURE EXCAVATION OR UNCLASSIFIED CHANNEL EXCAVATION. PIER SHALL BE REMOVED TO 2 FEET BELOW EXISTING GROUND, OR TO BEDROCK IF BEDROCK IS ENCOUNTERED LESS THAN 2 FEET BELOW EXISTING GROUND. ALL WORK RELATED TO THE PIER REMOVAL, INCLUDING INSTALLATION AND REMOVAL OF TEMPORARY STONE FILL (CLEAN) TYPE 1, SHALL BE PAID UNDER ITEM 529.15 "REMOVAL OF STRUCTURE".</div></div><div><div>4.</div><div>ALL DIMENSIONS SHOWN IN THE PLANS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 68 DEGREES FAHRENHEIT, UNLESS NOTED OTHERWISE.</div></div><div><div>5.</div><div>SEE THE PROJECT SPECIAL PROVISIONS FOR THE PROJECT SCHEDULE AND ALLOWABLE CLOSURE PERIOD.</div></div><div><div>6.</div><div>THE EXISTING STRUCTURAL STEEL IS PAINTED WITH MATERIAL THAT MAY CONTAIN LEAD. THE CONTRACTOR SHALL FOLLOW ALL APPLICABLE REGULATIONS WHEN HANDLING AND WORKING WITH THIS STEEL. THE REMOVED STRUCTURAL STEEL IS THE PROPERTY OF THE CONTRACTOR. THE CONTRACTOR SHALL INDEMNIFY AND HOLD THE STATE, ITS OFFICERS, AND EMPLOYEES HARMLESS CONCERNING THE CONTRACTOR'S USE OR DISPOSAL OF THE REMOVED EXISTING STRUCTURAL STEEL.</div></div><div><div>7.</div><div>ALL CORNERS OF CONCRETE SHALL BE CHAMFERED ¾" UNLESS NOTED OTHERWISE.</div></div><div><div>8.</div><div>MODIFICATIONS TO EXISTING UTILITIES, INCLUDING UTILITY POLES AND AERIAL ELECTRIC, SHALL BE THE RESPONSIBILITY OF THE UTILITY COMPANY. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANY TO IMPLEMENT ALL MODIFICATIONS. SEE THE UTILITY SPECIAL PROVISIONS AND CONSTRUCTION SEQUENCE NOTES FOR ADDITIONAL INFORMATION AND REQUIREMENTS.</div></div><div><div>9.</div><div>THE METHOD OF FORMING FOR SUBSEQUENT POURS AFTER PLACING PRECAST/PRESTRESSED SUPERSTRUCTURE UNITS SHALL BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR IS ENCOURAGED TO WORK WITH THE FABRICATOR IF ADDITIONAL SUPPORTS MAY BE REQUIRED. IN NO CASE SHALL THE CONTRACTOR ATTACH ADDITIONAL FORM OR SCREED SUPPORTS BY DRILLING OR SIMILAR MEANS INTO ANY PRECAST/PRESTRESSED SUPERSTRUCTURE UNITS.</div></div><div><div>10.</div><div>WATER REPELLENT, SILANE, SHALL BE APPLIED TO ALL EXPOSED CONCRETE (CAST-IN-PLACE AND PRECAST) SURFACES, EXCEPT FROM FACE OF CURB TO FACE OF CURB ON TOP OF THE CONCRETE BRIDGE DECK OVERLAY. SILANE SHALL BE APPLIED ON ALL EXPOSED SURFACES TO 1'-0" (MIN.) BELOW FINISH GRADE. SILANE FOR PRECAST ITEMS SHALL BE SHOP APPLIED AND PAYMENT SHALL BE INCLUDED IN THE UNIT BID PRICE FOR THE APPROPRIATE PRECAST ITEM. FOR SILANE APPLIED TO THE CAST-IN-PLACE CONCRETE RETAINING WALL AND ANY EXPOSED PORTIONS OF FOOTINGS, AS WELL AS CAST-IN-PLACE SUPERSTRUCTURE ELEMENTS (DECK FASCIA AND CURBS) PAYMENT SHALL BE MADE UNDER ITEM 514.10.</div></div></div><div><div>EARTHWORK:</div><div><div><div>1.</div><div>BEDROCK IS PRESENT AT THE ABUTMENTS, WINGWALLS AND THE RETAINING WALL. REMOVAL OF BEDROCK TO ACCOMMODATE THE MINIMUM FOOTING THICKNESSES DETAILED IN THE PLANS SHALL BE PAID FOR UNDER ITEM 204.25 "STRUCTURE EXCAVATION".</div></div><div><div>2.</div><div>"STONE FILL, TYPE IV", "GEOTEXTILE UNDER STONE FILL", AND "GRUBBING MATERIAL" UNDER THE BRIDGE AS SHOWN IN THE PLANS SHALL BE PLACED BEFORE THE NEW BEAMS ARE SET.</div></div><div><div>3.</div><div>DO NOT EXCAVATE BEDROCK IN ORDER TO PLACE THE SPECIFIED DEPTH OF"STONE FILL, TYPE IV". FOR LOCATIONS WHERE THE SPECIFIED DEPTH OF "STONE FILL, TYPE IV" CAN NOT BE PLACED DUE TO PRESENCE OF BEDROCK, CONTRACTOR SHALL NOTIFY THE RESIDENT ENGINEER AND SHALL PLACE "STONE FILL, TYPE IV" AND RELATED ITEMS AS DIRECTED BY THE ENGINEER.</div></div><div><div>4.</div><div>UPON COMPLETION OF THE EXCAVATION FOR SUBSTRUCTURES FOUNDED ON BEDROCK AND PRIOR TO PLACING FORMWORK, THE CONTRACTOR SHALL NOTIFY THE RESIDENT ENGINEER SO THAT THE RESIDENT ENGINEER MAY NOTIFY THE PROJECT MANAGER AND THE VTRANS STATE GEOLOGIST. THE GEOLOGIST WILL DETERMINE IF THE BEDROCK IS COMPETENT TO OBTAIN THE NOMINAL BEARING RESISTANCE AS SHOWN ON THE PLANS. THE CONTRACTOR SHALL NOTIFY THE RESIDENT ENGINEER AT LEAST 72 HRS PRIOR TO NEED FOR ANALYSIS.</div></div><div><div>5.</div><div>BEDROCK THAT IS EXCAVATED FOR FOOTINGS SHALL BE EXCAVATED TO PROVIDE A LEVEL SURFACE, OR AS DIRECTED BY THE ENGINEER.</div></div><div><div>6.</div><div>FOOTINGS SHALL BE FOUNDED ON BEDROCK WHICH HAS BEEN CLEANED OF ALL LOOSE ROCK AND DEBRIS TO ENSURE THAT SUBSTRUCTURES ARE PLACED ON COMPETENT ROCK.</div></div><div><div>7.</div><div>IF SUITABLE BEDROCK ISN'T ENCOUNTERED UNTIL ELEVATIONS AS LOW AS THE FOLLOWING, THE CONTRACTOR SHALL NOTIFY THE RESIDENT ENGINEER SO THAT THE SUITABILITY OF THE SUBSTRUCTURE DESIGNS CAN BE EVALUATED FOR THE UNFORESEEN DESIGN CONDITIONS:<div><div>a.</div><div>ELEV. = 981.7 FOR ABUTMENT 1, INCLUDING WW1 & WW2</div></div><div><div>b.</div><div>ELEV. = 982.2 FOR ABUTMENT 2, INCLUDING WW3 & WW4</div></div><div><div>c.</div><div>ELEV. = 985.3 FOR TALLEST SECTION OF RETAINING WALL ADJACENT TO WW3</div></div><div><div>d.</div><div>ELEV. = 989.6 FOR SHORTEST SECTION OF CANTILEVER RETAINING WALL</div></div></div></div></div></div><div><div>SUBSTRUCTURES AND APPROACH SLABS:</div><div><div><div>1.</div><div>THE UNIT PRICE FOR EACH PRECAST ABUTMENT SHALL INCLUDE ALL SEGMENTS INCLUDING THE ASSOCIATED PRECAST WINGWALLS AND ALL LABOR AND MATERIALS TO CONNECT WINGWALLS. THIS WORK SHALL BE PAID FOR UNDER ITEM 540.10, "PRECAST CONCRETE STRUCTURE (ABUTMENT #1)" OR "PRECAST CONCRETE STRUCTURE (ABUTMENT #2)" AS APPROPRIATE.</div></div><div><div>2.</div><div>IF VERTICAL CONSTRUCTION JOINTS ARE REQUIRED BY THE CONTRACTOR FOR SHIPMENT OF THE ABUTMENTS AND/OR WINGWALLS, THEN THE SECTIONS SHALL BE KEYED AND MATCH CAST. A JOINT DETAIL SHALL BE SHOWN ON THE FABRICATION DRAWINGS.</div></div></div></div><div><div>3.</div><div>CONTRACTOR/FABRICATOR SHALL SHOP PREPARE PROPER FIT OF ALL BRIDGE SUBSTRUCTURE ELEMENTS TO BE CONNECTED.</div></div><div><div>4.</div><div>4" DIAMETER WEEPHOLES SHALL BE PROVIDED IN ALL ABUTMENTS, WINGWALLS AND THE RETAINING WALL AT A MAXIMUM SPACING OF 10'-0". WEEPHOLES SHALL BE LEVEL AND SHALL BE LOCATED 1'-0" ABOVE THE TOP OF FOOTING ELEVATION.</div></div><div><div>5.</div><div>REINFORCEMENT IN TOP OF ABUTMENTS SHALL BE CENTERED ABOUT THE ANCHOR RODS SO THAT NO REINFORCEMENT IS DAMAGED DURING ANCHOR ROD INSTALLATION.</div></div><div><div>6.</div><div>CONTRACTOR SHALL PLACE LOAD DISTRIBUTING MATS BEHIND THE SUBSTRUCTURES FOR CONSTRUCTION ACTIVITIES SUCH AS DELIVERY AND INSTALLATION OF PRESTRESSED BOX BEAMS, ETC., WHEN LOADS ARE WITHIN 25' FROM THE BACK OF THE ABUTMENT AND/OR WINGWALLS. CONTRACTOR SHALL PROVIDE CALCULATIONS AND PLANS TO DOCUMENT SUITABILITY OF THE SUBSTRUCTURES FOR ALL CONSTRUCTION LOADS IN ACCORDANCE WITH SECTION 105. LOAD DISTRIBUTING MATS SHALL BE PAID UNDER ITEM 510.21.</div></div><div><div>7.</div><div>CONTRACTOR IS ADVISED THAT THE BEDROCK ELEVATIONS SHOWN IN THE BORINGS VARY. TO REDUCE EXCAVATION OF BEDROCK, TOP OF FOOTING ELEVATIONS WERE SET AND FOOTING THICKNESSES ARE EXPECTED TO VARY. IT IS LIKELY THAT FOOTING THICKNESSES GREATER THAN 5' WILL OCCUR. AT LOCATIONS WHERE FOOTING THICKNESSES ARE 3'-0" OR GREATER, CONTRACTOR SHALL PLACE A GRID OF #5@12" HORIZONTAL AND VERTICAL REINFORCING IN THE FACE OF THE FOOTING AS DIRECTED BY THE RESIDENT ENGINEER. PAYMENT FOR THESE ADDITIONAL #5 BARS SHALL BE PAID UNDER ITEM 900.608, "SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, MASS POUR)".</div></div><div><div>8.</div><div>PLACE JOINT FILLER/CORK BETWEEN EXTERIOR BEAMS/CURBS AND ABUTMENT CHEEKWALLS AT ALL FOUR CORNERS OF BRIDGE. PAYMENT FOR JOINT FILLER/CORK SHALL BE PAID FOR UNDER ITEM 510.21.</div></div><div><div>9.</div><div>DRAIN PIPES SHALL BE PLACED AT ALL LOW POINTS OF THE APPROACH SLAB SEATS IN THE CURTAIN WALLS AT EACH END OF THE BRIDGE.</div></div><div><div>10.</div><div>ABUTMENT STEMS MAY BE PLACED ONCE FOOTING CONCRETE HAS OBTAINED F'C = 3500 PSI.</div></div><div><div>11.</div><div>PRIOR TO BACKFILLING, GROUT IN GROUTED SPLICE COUPLERS SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 3500 PSI BASED ON MANUFACTURER'S RECOMMENDATIONS. PROVIDE APPROPRIATE CUBE MOLDS AS DESCRIBED IN AASHTO T106 FOR 3 SETS OF 3 DAY CUBES, 3 SETS OF 28 DAY CUBES, AND A MINIMUM OF 3 MORE CUBES TO TEST FOR THE 3500 PSI MINIMUM (PRIOR TO BACKFILLING) IN ACCORDANCE WITH SUBSECTION 540.11.</div></div><div><div>12.</div><div>ABUTMENTS SHALL BE BACKFILLED TO 1'-6" BELOW TOP OF ABUTMENT BEAM SEATS PRIOR TO ERECTING BEAMS.</div></div></div><div><div>BRIDGE DECK:</div><div><div><div>1.</div><div>CONCRETE FOR BRIDGE DECK OVERLAY AND CURTAIN WALLS SHALL BE PLACED IN ONE PLACEMENT STARTING AT THE ABUTMENT 1 CURTAIN WALL AND SHALL PROCEED CONTINUOUSLY TO THE ABUTMENT 2 CURTAIN WALL.</div></div><div><div>2.</div><div>BRIDGE DECK OVERLAY SHALL HAVE A BROOM FINISH AND LONGITUDINAL DECK GROOVING.</div></div></div></div><div><div>REINFORCEMENT:</div><div><div><div>1.</div><div>ALL REINFORCING STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE "CONCRETE REINFORCING STEEL INSTITUTE".</div></div><div><div>2.</div><div>ALL LEVEL 1 REINFORCING STEEL SHALL BE EPOXY COATED, EXCEPT FOR REINFORCEMENT IN FOOTINGS.</div></div><div><div>3.</div><div>ALL MECHANICAL CONNECTORS IN ABUTMENTS AND WINGWALLS SHALL BE GROUTED SPLICE COUPLERS. ALL MECHANICAL CONNECTORS SHALL BE CAPABLE OF ATTAINING 125% OF THE SPECIFIED YIELD STRENGTH OF THE REINFORCING BAR BEING SPLICED. ADDITIONAL MECHANICAL CONNECTORS SHALL BE PROVIDED TO VTRANS FOR THE PURPOSE OF MATERIAL TESTING.</div></div><div><div>4.</div><div>GROUT PORTS FOR GROUTED SPLICE COUPLERS SHALL BE ON THE BACK FACE OF ELEMENTS (HIDDEN FROM VIEW) WHENEVER POSSIBLE.</div></div><div><div>5.</div><div>GROUTED SPLICE COUPLERS SHALL HAVE A CLEAR COVER OF 3", EXCEPT CLEAR COVER SHALL BE 2" AT THE BACK OF ABUTMENT AND WINGWALL STEMS, UNLESS SPECIFIED OTHERWISE ON THE PLANS. CLEAR COVER SHALL BE DETAILED ON THE FABRICATION DRAWINGS. DIAMETER OF GROUTED SPLICE COUPLERS SHALL BE PER MANUFACTURER STANDARD, 3 ½" DIA. FOR NO. 8 BARS AND 3" DIA. FOR NO. 5 TO NO. 7 BARS.</div></div><div><div>6.</div><div>GROUT FOR GROUTED SPLICE COUPLERS SHALL MEET THE REQUIREMENTS OF SUBSECTION 540.11. GROUT AND PLASTIC SHIMS, INCLUDING INSTALLATION, SHALL BE INCIDENTAL TO THE APPROPRIATE PRECAST UNIT PAID UNDER ITEM 540.10.</div></div><div><div>7.</div><div>PRECAST FABRICATOR SHALL PROVIDE TEMPLATES OF ACTUAL GROUTED SPLICE COUPLER LOCATIONS IN THE ABUTMENTS AND WINGWALLS TO THE CONTRACTOR FOR THE PURPOSE OF PLACING FOOTING REINFORCEMENT TO MATCH.</div></div><div><div>8.</div><div>ALL REINFORCEMENT SHALL HAVE A CLEAR COVER OF 3" UNLESS SPECIFIED OTHERWISE ON THE PLANS.</div></div><div><div>9.</div><div>FOOTING DOWEL BAR EMBEDMENT LENGTH SHALL BE 2'-6".</div></div></div></div><div><div>PRESTRESSED BOX BEAMS:</div><div><div><div>1.</div><div>CONCRETE IN BOX BEAMS SHALL ATTAIN F'C = 8 KSI (MINIMUM) AT 28 DAYS.</div></div><div><div>2.</div><div>PRESTRESS SHALL NOT BE TRANSFERRED TO THE CONCRETE UNTIL THE CONCRETE HAS ATTAINED A COMPRESSIVE STRENGTH, AS SHOWN BY CYLINDER TEST, OF AT LEAST F'CI = 6 KSI (MINIMUM RELEASE STRENGTH).</div></div><div><div>3.</div><div>ALL PRETENSIONING STRANDS SHALL BE 0.6 INCH DIAMETER, UNCOATED, SEVEN-WIRE, LOW RELAXATION STEEL STRANDS AND SHALL CONFORM TO AASHTO M 203. THE TENSILE STRENGTH OF THE PRETENSIONING STRANDS SHALL BE 270 KSI AND THE INITIAL TENSION PER 0.6 INCH DIAMETER STRAND SHALL BE 44 KIPS.</div></div><div><div>4.</div><div>ALL POST-TENSIONING STRANDS SHALL BE 0.6 INCH DIAMETER, SEVEN-WIRE, LOW RELAXATION STEEL STRANDS AND SHALL CONFORM TO AASHTO M 203. THE TENSILE STRENGTH OF THE POSTTENSIONING STRANDS SHALL BE 270 KSI AND THE TENSION PER 0.6 INCH DIA. STRAND SHALL BE 47 KIPS.</div></div><div><div>5.</div><div>THE TOP OF ALL BOX BEAMS SHALL BE GIVEN A RAKE FINISH (1/4 INCH AMPLITUDE) TRANSVERSELY ACROSS THE WIDTH.</div></div><div><div>6.</div><div>THE FABRICATOR IS FULLY RESPONSIBLE FOR THE DESIGN OF THE LIFTING DEVICES, WHICH SHALL BE ADEQUATE FOR THE SAFETY FACTORS REQUIRED BY THE ERECTION PROCEDURE.</div></div></div></div><div><div>7.</div><div>PRECAST SHALL SANDBLAST EACH SHEAR KEY FACE OF</div></div></div>			
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GENERAL INFORMATION

SYMBOLOLOGY LEGEND NOTE

THE SYMBOLOLOGY ON THIS SHEET IS INTENDED TO COVER STANDARD CONVENTIONAL SYMBOLOLOGY. THE SYMBOLOLOGY IS USED FOR EXISTING & PROPOSED FEATURES WITH HEAVIER LINEWEIGHT, IN COMBINATION WITH PROJECT ANNOTATION, AS NOTED ON PROJECT PLAN SHEETS. THIS LEGEND SHEET COVERS THE BASICS. SYMBOLOLOGY ON PLANS MAY VARY, PLAN ANNOTATIONS AND NOTES SHOULD BE USED TO CLARIFY AS NEEDED.

R.O.W. ABBREVIATIONS (CODES) & SYMBOLS

POINT	CODE	DESCRIPTION
	CH	CHANNEL EASEMENT
	CONST	CONSTRUCTION EASEMENT
	CUL	CULVERT EASEMENT
	D&C	DISCONNECT & CONNECT
	DIT	DITCH EASEMENT
	DR	DRAINAGE EASEMENT
	DRIVE	DRIVEWAY EASEMENT
	EC	EROSION CONTROL
	HWY	HIGHWAY EASEMENT
	I&M	INSTALL & MAINTAIN EASEMENT
	LAND	LANDSCAPE EASEMENT
	R&RES	REMOVE & RESET
	R&REP	REMOVE & REPLACE
	SR	SLOPE RIGHT
	UE	UTILITY EASEMENT
	(P)	PERMANENT EASEMENT
	(T)	TEMPORARY EASEMENT
■	BNDNS	BOUND SET
▣	BNDNS	BOUND TO BE SET
●	IPNS	IRON PIN SET
⊙	IPNS	IRON PIN TO BE SET
⊠	CALC	EXISTING ROW POINT
○	PROW	PROPOSED ROW POINT
[LENGTH]		LENGTH CARRIED ON NEXT SHEET

COMMON TOPOGRAPHIC POINT SYMBOLS

POINT	CODE	DESCRIPTION
⊕	APL	BOUND APPARENT LOCATION
▣	BM	BENCH MARK
▣	BND	BOUND
▣	CB	CATCH BASIN
⊕	COMB	COMBINATION POLE
▣	DITHR	DROP INLET THROATED DNC
⊕	EL	ELECTRIC POWER POLE
⊙	FPOLE	FLAGPOLE
⊙	GASFIL	GAS FILLER
⊙	GP	GUIDE POST
⊗	GSO	GAS SHUT OFF
⊙	GUY	GUY POLE
⊙	GUYW	GUY WIRE
⊗	GV	GATE VALUE
⊕	H	TREE HARDWOOD
△	HCTRL	CONTROL HORIZONTAL
△	HVCTRL	CONTROL HORIZ. & VERTICAL
◇	HYD	HYDRANT
⊙	IP	IRON PIN
⊙	IPIPE	IRON PIPE
⊕	LI	LIGHT - STREET OR YARD
⊕	MB	MAILBOX
⊙	MH	MANHOLE (MH)
▣	MM	MILE MARKER
⊙	PM	PARKING METER
▣	PMK	PROJECT MARKER
⊙	POST	POST STONE/WOOD
⊕	RRSIG	RAILROAD SIGNAL
⊕	RRSL	RAILROAD SWITCH LEVER
⊕	S	TREE SOFTWOOD
⊕	SAT	SATELLITE DISH
⊕	SHRUB	SHRUB
⊕	SIGN	SIGN
⊕	STUMP	STUMP
⊕	TEL	TELEPHONE POLE
⊙	TIE	TIE
⊕	TSIGN	SIGN W/DOUBLE POST
⊕	VCTRL	CONTROL VERTICAL
⊙	WELL	WELL
⊗	WSO	WATER SHUT OFF

THESE ARE COMMON VAOT SURVEY POINT SYMBOLS FOR EXISTING FEATURES, ALSO USED FOR PROPOSED FEATURES WITH HEAVIER LINEWEIGHT, IN COMBINATION WITH PROPOSED ANNOTATION.

PROPOSED GEOMETRY CODES

CODE	DESCRIPTION
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
CC	CENTER OF CURVE
PT	POINT OF TANGENCY
PCC	POINT OF COMPOUND CURVE
PRC	POINT OF REVERSE CURVE
POB	POINT OF BEGINNING
POE	POINT OF ENDING
STA	STATION PREFIX
AH	AHEAD STATION SUFFIX
BK	BACK STATION SUFFIX
D	CURVE DEGREE OF (100FT)
R	CURVE RADUIS OF
T	CURVE TANGENT LENGTH
L	CURVE LENGTH OF
E	CURVE EXTERNAL DISTANCE

UTILITY SYMBOLOLOGY

UNDERGROUND UTILITIES

— UT —	TELEPHONE
— UE —	ELECTRIC
— UTV —	CABLE (TV)
————	ELECTRIC+CABLE
————	ELECTRIC+TELEPHONE
————	CABLE+TELEPHONE
————	ELECTRIC+CABLE+TELEP.
— G —	GAS LINE
— W —	WATER LINE
— S —	SANITARY SEWER (SEPTIC)

ABOVE GROUND UTILITIES (AERIAL)

— T —	TELEPHONE
— E —	ELECTRIC
————	CABLE (TV)
————	ELECTRIC+CABLE
————	ELECTRIC+TELEPHONE
— AER E&T —	ELECTRIC+TELEPHONE
————	CABLE+TELEPHONE
————	ELECTRIC+CABLE+TELEP.
————	UTILITY POLE GUY WIRE

PROJECT CONSTRUCTION SYMBOLOLOGY

PROJECT DESIGN & LAYOUT SYMBOLOLOGY

— - - - CZ — - - -	CLEAR ZONE
————	PLAN LAYOUT MATCHLINE

PROJECT CONSTRUCTION FEATURES

△ — △ — △ — △	TOP OF CUT SLOPE
⊙ — ⊙ — ⊙ — ⊙	TOE OF FILL SLOPE
⊗ ⊗ ⊗ ⊗ ⊗ ⊗	STONE FILL
-----	BOTTOM OF DITCH
=====	CULVERT PROPOSED
-----	STRUCTURE SUBSURFACE
PDF ——— PDF ———	PROJECT DEMARCATION FENCE
————	BARRIER FENCE
————	TREE PROTECTION ZONE (TPZ)
//////////	STRIPING LINE REMOVAL
~~~~~	SHEET PILES

CONVENTIONAL BOUNDARY SYMBOLOLOGY

BOUNDARY LINES

———— TOWN LINE ———	TOWN BOUNDARY LINE
———— COUNTY LINE ———	COUNTY BOUNDARY LINE
———— STATE LINE ———	STATE BOUNDARY LINE
/// — — — ///	PROPOSED STATE R.O.W. (LIMITED ACCESS)
/// — — —	PROPOSED STATE R.O.W.
/// — — —	STATE ROW (LIMITED ACCESS)
————	STATE ROW
————	TOWN ROW
— . . . . . — . . . . .	PERMANENT EASEMENT LINE (P)
— . . . . . — . . . . .	TEMPORARY EASEMENT LINE (T)
+ ——— + ———	SURVEY LINE
— P ——— — P ———	PROPERTY LINE (P/L)
— L ——— — L ———	
△ — SR — ⊙ — SR — △ — SR — ⊙	SLOPE RIGHTS
6f ——— 6f ———	6F PROPERTY BOUNDARY
4f ——— 4f ———	4F PROPERTY BOUNDARY
HAZ ——— HAZ ———	HAZARDOUS WASTE

EPSC LAYOUT PLAN SYMBOLOLOGY

EPSC MEASURES

QNNVOQNNVOQNNVO	FILTER CURTAIN
▣ — ▣ — ▣ — ▣	SILT FENCE
————	SILT FENCE WOVEN WIRE
▶ —▶ —▶ —▶	CHECK DAM
▣	DISTURBED AREAS REQUIRING RE-VEGETATION
▣	EROSION MATTING

ENVIRONMENTAL RESOURCES

▼ ——— ▼	WETLAND BOUNDARY
-----	RIPARIAN BUFFER ZONE
-----	WETLAND BUFFER ZONE
-----	SOIL TYPE BOUNDARY
—— T&E ———	THREATENED & ENDANGERED SPECIES
—— HAZ ———	HAZARDOUS WASTE AREA
—— AG ———	AGRICULTURAL LAND
—— HABITAT ———	FISH & WILDLIFE HABITAT
—— FLOOD PLAIN ———	FLOOD PLAIN
— OHW —	ORDINARY HIGH WATER (OHW)
————	STORM WATER
————	USDA FOREST SERVICE LANDS
————	WILDLIFE HABITAT SUIT/CONN

ARCHEOLOGICAL & HISTORIC

—— ARCH ———	ARCHEOLOGICAL BOUNDARY
—— HISTORIC DIST ———	HISTORIC DISTRICT BOUNDARY
—— HISTORIC ———	HISTORIC AREA
Ⓜ	HISTORIC STRUCTURE

CONVENTIONAL TOPOGRAPHIC SYMBOLOLOGY

EXISTING FEATURES

-----	ROAD EDGE PAVEMENT
-----	ROAD EDGE GRAVEL
-----	DRIVEWAY EDGE
-----	DITCH
————	FOUNDATION
× ——— × ——— × ——— × ———	FENCE (EXISTING)
————	FENCE WOOD POST
————	FENCE STEEL POST
~~~~~	GARDEN
○ ——— ○ ——— ○ ——— ○ ——— ○ ——— ○ ———	ROAD GUARDRAIL
	RAILROAD TRACKS
-----	CULVERT (EXISTING)
○○○○○○○○○○○○○○○○○○○○	STONE WALL
-----	WALL
~~~~~	WOOD LINE
~~~~~	BRUSH LINE
~~~~~	HEDGE
=====	BODY OF WATER EDGE
▣	LEDGE EXPOSED

PROJECT NAME:	LINCOLN
PROJECT NUMBER:	BRF 0188 (8)
FILE NAME: z12bl48lgnd.dgn	PLOT DATE: 8-DEC-2014
PROJECT LEADER: G.K. DONINGTON	DRAWN BY: S.BROWN
DESIGNED BY: S.BROWN	CHECKED BY: A.STOCKIN
LEGEND SHEET	SHEET 6 OF 62



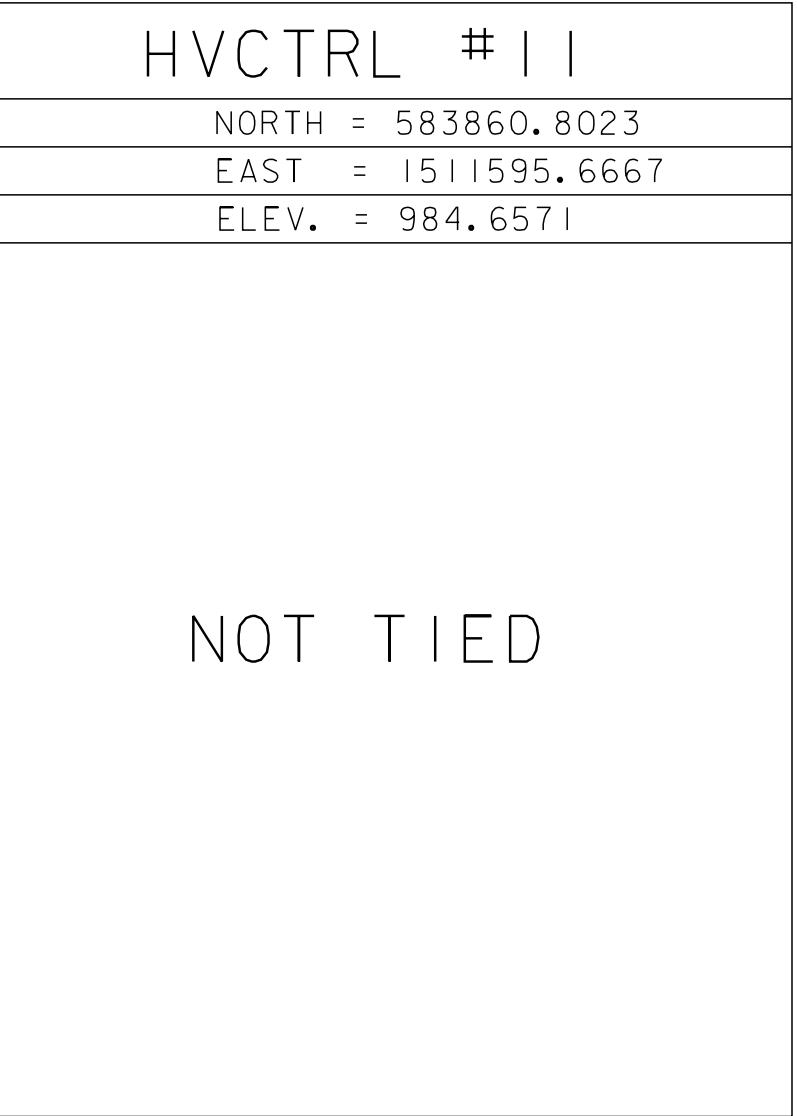
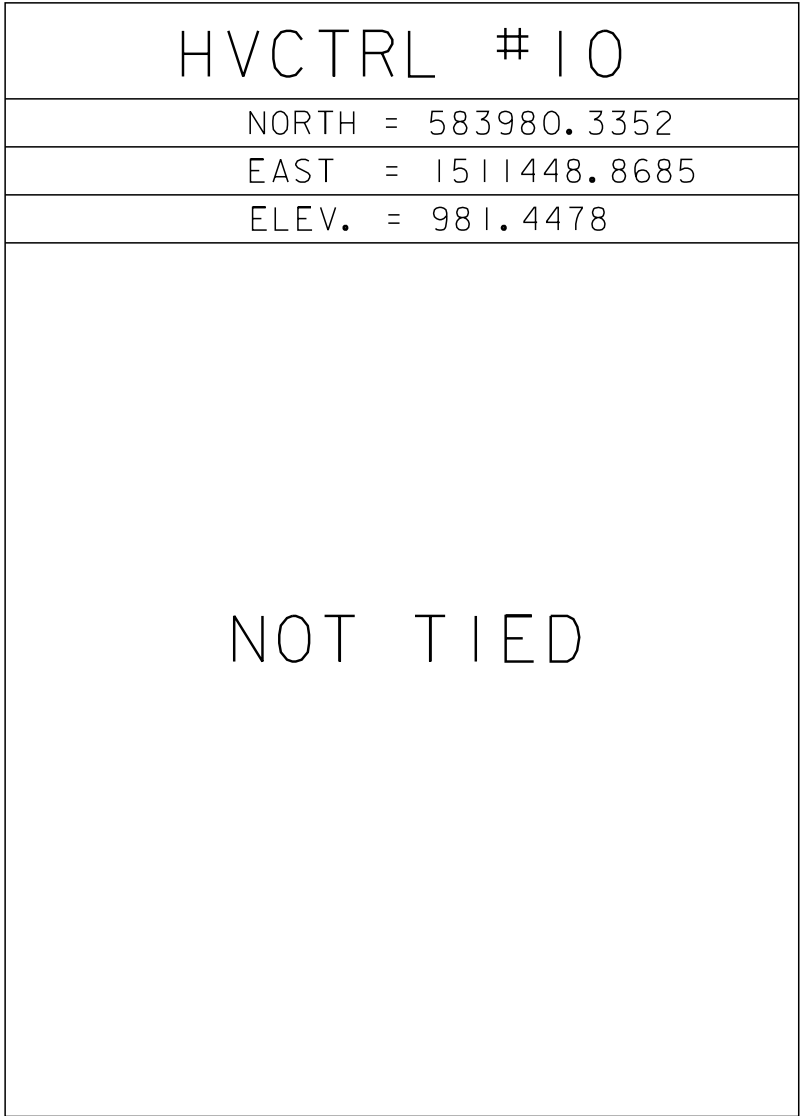
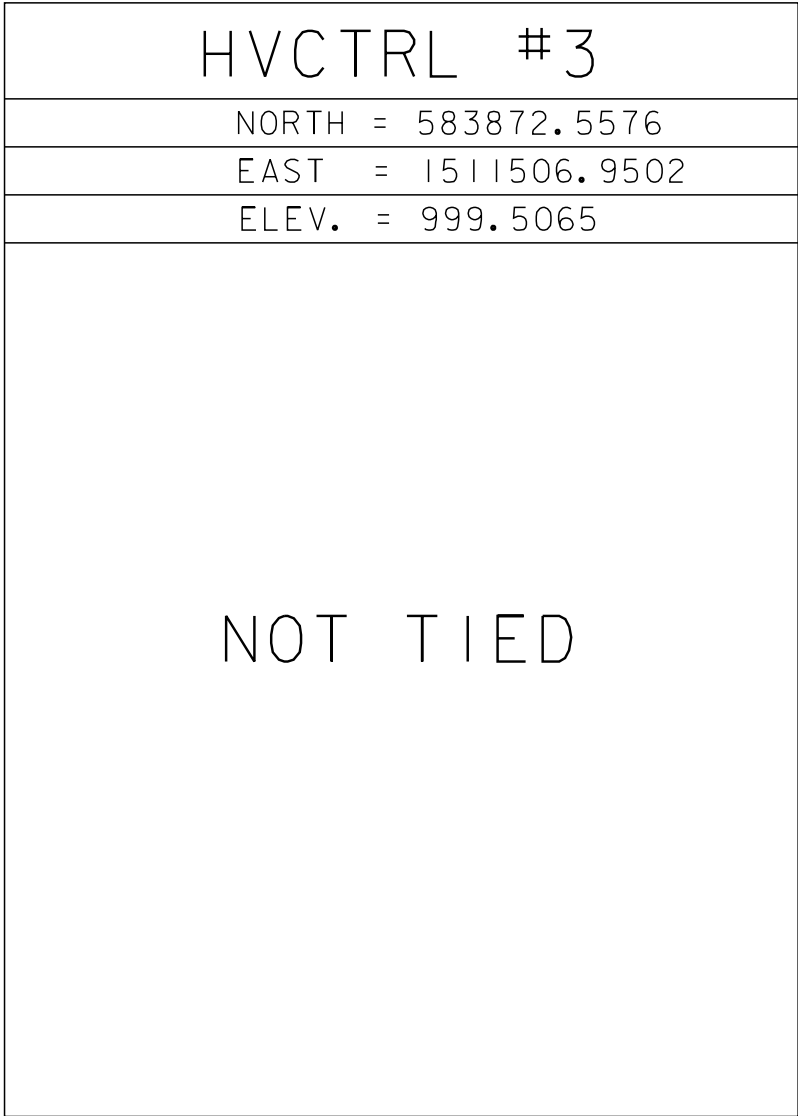
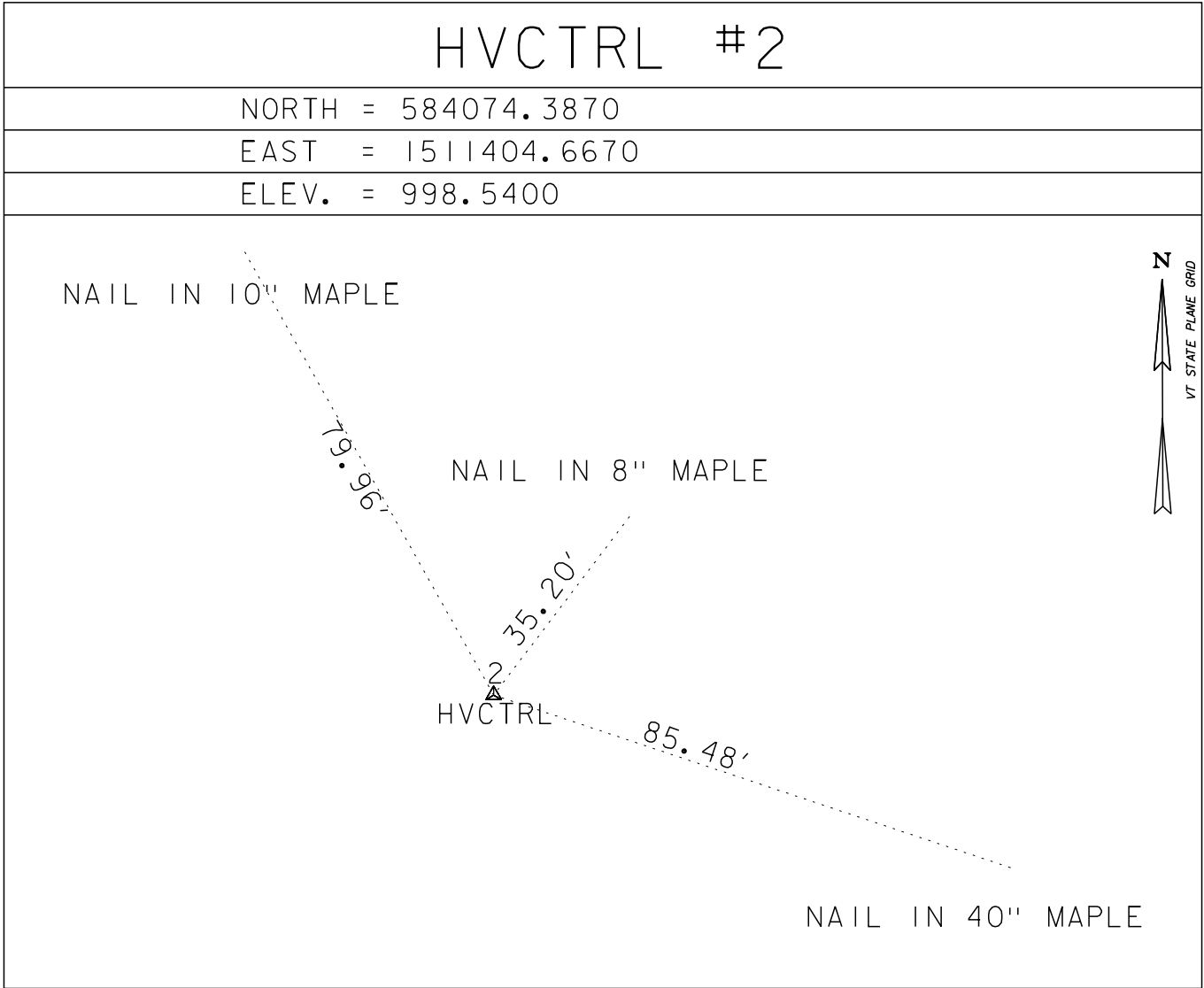
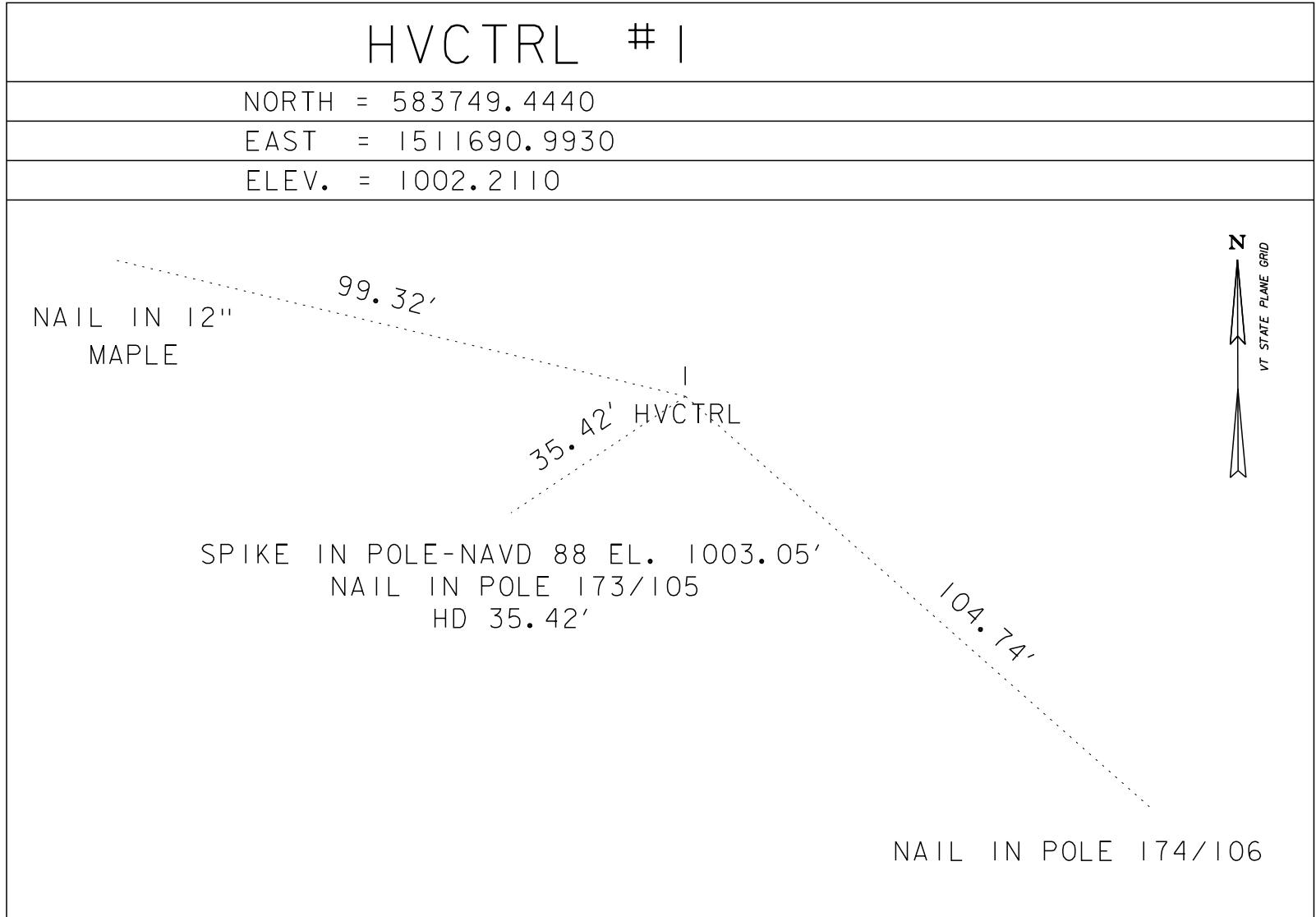
STATE OF VERMONT AGENCY OF TRANSPORTATION														QUANTITY SHEET 1													
SUMMARY OF ESTIMATED QUANTITIES														TOTALS		DESCRIPTIONS						DETAILED SUMMARY OF QUANTITIES					
								ROADWAY	LANDSCAPING	EROSION CONTROL	BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS						
								0.18					0.18		ACRE	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	201.11				<b>EARTHWORK SUMMARY</b>						
								2650					2650		CY	COMMON EXCAVATION	203.15		2650	CY	COMMON EXCAVATION (2649 x 1.0)						
								465					465		CY	SOLID ROCK EXCAVATION	203.16		210	CY	UNCLASSIFIED CHANNEL EXCAVATION (280 x 0.75)						
											280		280		CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27		555	CY	STRUCTURE EXCAVATION (740 x 0.75)						
								13					13		CY	EARTH BORROW	203.30		3415	CY	SUBTOTAL						
								860					860		CY	SAND BORROW	203.31		85	CY	ROUNDING						
								10					10		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22		3500	CY	TOTAL FILL AVAILABLE						
											740		740		CY	STRUCTURE EXCAVATION	204.25		13	CY	TOTAL FILL REQUIRED						
											400		400		CY	GRANULAR BACKFILL FOR STRUCTURES	204.30		3487	CY	TOTAL WASTE						
								61					61		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10				<b>SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)</b>						
								1150					1150		CY	SUBBASE OF DENSE GRADED CRUSHED STONE	301.35		268	TON	TYPE IIS						
								5.4					5.4		CWT	EMULSIFIED ASPHALT	404.65		367	TON	TYPE I/S						
								1					1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50		635	TON	TOTAL SUPERPAVE						
											140		140		CY	CONCRETE, HIGH PERFORMANCE CLASS A	501.33										
											22		22		CY	CONCRETE, HIGH PERFORMANCE CLASS B	501.34										
											18350		18350		LB	REINFORCING STEEL, LEVEL I	507.11										
											14390		14390		LB	REINFORCING STEEL, LEVEL II	507.12										
											184		184		LF	DRILLING AND GROUTING DOWELS	507.16										
											141		141		EACH	MECHANICAL BAR CONNECTOR	507.19										
											392		392		SY	LONGITUDINAL DECK GROOVING	509.10										
											994		994		LF	PRESTRESSED CONCRETE BOX BEAMS (45" X 48")	510.21										
											870		870		LF	GROUTING SHEAR KEYS	510.24										
											12		12		GAL	WATER REPELLENT, SILANE	514.10										
											80		80		LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10										
											80		80		LF	JOINT SEALER, HOT POURED	524.11										
											262		262		LF	BRIDGE RAILING, GALVANIZED 4 RAIL BOX BEAM	525.34										
											1		1		EACH	REMOVAL OF STRUCTURE (3,200 SF - EST)	529.15										
											32		32		EACH	BEARING DEVICE ASSEMBLY, STEEL REINFORCED ELASTOMERIC PAD	531.17										
											1		1		LS	PRECAST CONCRETE STRUCTURE (ABUTMENT #1)	540.10										
											1		1		LS	PRECAST CONCRETE STRUCTURE (ABUTMENT #2)	540.10										
											1		1		LS	PRECAST CONCRETE STRUCTURE (APPROACH SLAB #1)	540.10										
											1		1		LS	PRECAST CONCRETE STRUCTURE (APPROACH SLAB #2)	540.10										
								82					82		LF	12" CSP .064 (2-2/3 X 1/2)	601.0005										
								40					40		LF	18" RCP CLASS IV	601.0816										
								30					30		LF	18" CPEP	601.0915										
								2					2		EACH	PRECAST REINFORCED CONCRETE DROP INLET WITH CAST IRON GRATE	604.18										
								15					15		CY	STONE FILL, TYPE II	613.11										
											440		440		CY	STONE FILL, TYPE IV	613.13										
								150					150		LF	PRECAST REINFORCED CONCRETE CURB, TYPE B	616.26										
								5					5		EACH	STEEL MARKER POSTS	619.16										
																			PROJECT NAME: LINCOLN								
																			PROJECT NUMBER: BRF 0188 (8)								
																			FILE NAME: z10J066qs.dgn								
																			PROJECT LEADER: G.K.DONINGTON								
																			DESIGNED BY: A.STOCKIN								
																			QUANTITY SHEET (I)								
																			PLOT DATE: 8-DEC-2014								
																			DRAWN BY: S.BROWN								
																			CHECKED BY: A.STOCKIN								
																			SHEET 7 OF 62								

STATE OF VERMONT AGENCY OF TRANSPORTATION															QUANTITY SHEET 2									
SUMMARY OF ESTIMATED QUANTITIES															TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES			
							ROADWAY	LANDSCAPING	EROSION CONTROL	BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS				
									520			520		LF	WOVEN WIRE FENCE WITH WOOD POSTS	620.26								
							283					283		LF	STEEL BEAM GUARDRAIL, GALVANIZED	621.20								
							2					2		EACH	MANUFACTURED TERMINAL SECTION, TANGENT	621.51								
							4					4		EACH	GUARDRAIL APPROACH SECTION, GALVANIZED 4 RAIL BOX BEAM	621.73								
							230					230		LF	REMOVAL AND DISPOSAL OF GUARDRAIL	621.80								
							733					733		LF	TEMPORARY TRAFFIC BARRIER	621.90								
							160					160		HR	UNIFORMED TRAFFIC OFFICERS	630.10								
							480					480		HR	FLAGGERS	630.15								
											1	1		LS	FIELD OFFICE, ENGINEERS	631.10								
											1	1		LS	TESTING EQUIPMENT, CONCRETE	631.16								
											1	1		LS	TESTING EQUIPMENT, BITUMINOUS	631.17								
											3000	3000		DL	FIELD OFFICE TELEPHONE (N.A.B.I.)	631.26								
							1					1		LS	MOBILIZATION/DEMOBILIZATION	635.11								
							1					1		LS	TRAFFIC CONTROL	641.10								
							2					2		EACH	PORTABLE CHANGEABLE MESSAGE SIGN	641.15								
							1400					1400		LF	4 INCH WHITE LINE	646.20								
							1400					1400		LF	4 INCH YELLOW LINE	646.21								
										330		330		SY	GEOTEXTILE UNDER STONE FILL	649.31								
									175			175		SY	GEOTEXTILE FOR SILT FENCE	649.51								
									200			200		SY	GEOTEXTILE FOR FILTER CURTAIN	649.61								
								4				4		LB	SEED	651.15								
								126				126		LB	FERTILIZER	651.18								
								0.1				0.1		TON	AGRICULTURAL LIMESTONE	651.20								
								1.6				1.6		TON	HAY MULCH	651.25								
								210				210		CY	TOPSOIL	651.35								
								240				240		SY	GRUBBING MATERIAL	651.40								
									1			1		LS	EPSC PLAN	652.10								
									40			40		HR	MONITORING EPSC PLAN	652.20								
									1			1		LU	MAINTENANCE OF EPSC PLAN (N.A.B.I.)	652.30								
									1040			1040		SY	TEMPORARY EROSION MATTING	653.20								
									1040			1040		SY	PERMANENT EROSION MATTING	653.21								
									55			55		CY	VEHICLE TRACKING PAD	653.35								
									1			1		EACH	INLET PROTECTION DEVICE, TYPE I	653.40								
									1230			1230		LF	PROJECT DEMARCATION FENCE	653.55								
							1					1		LU	PRICE ADJUSTMENT, FUEL (N.A.B.I.)	690.50								
										330		330		CY	SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, MASS POUR)	900.608								
										7		7		CY	SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, RAPID SET)(FPQ)	900.608								
										1		1		LS	SPECIAL PROVISION (CPM SCHEDULE)	900.645								
										1		1		LU	SPECIAL PROVISION (INCENTIVE/DISINCENTIVE)(N.A.B.I.)	900.650								
							1					1		LU	SPECIAL PROVISION (MAT DENSITY PAY ADJUSTMENT, SMALL QUANTITY)(N.A.B.I.)	900.650								
							1					1		LU	SPECIAL PROVISION (MIXTURE PAY ADJUSTMENT)(N.A.B.I.)	900.650								
							640					640		TON	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)	900.680								
															PROJECT NAME: LINCOLN									
															PROJECT NUMBER: BRF 0188 (8)									
															FILE NAME: z10J066qs.dgn									
															PROJECT LEADER: G.K.DONINGTON									
															DESIGNED BY: A.STOCKIN									
															QUANTITY SHEET (2)									
															PLOT DATE: 8-DEC-2014									
															DRAWN BY: S.BROWN									
															CHECKED BY: A.STOCKIN									
															SHEET 8 OF 62									

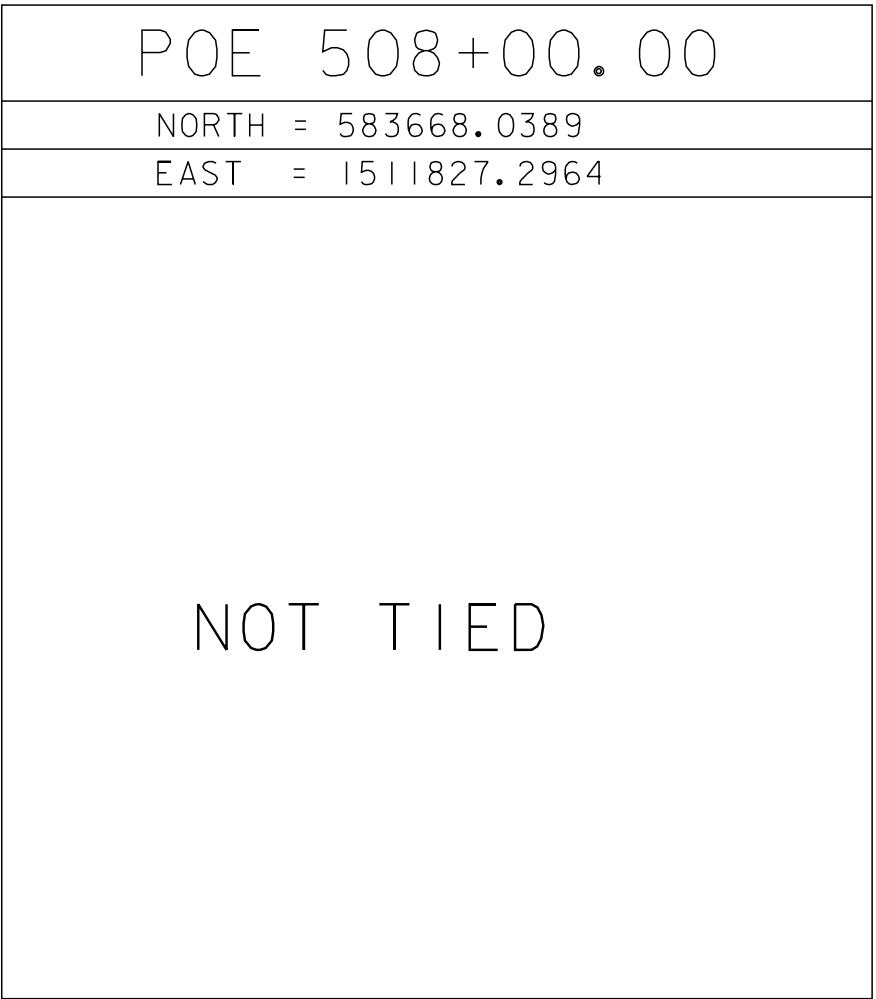
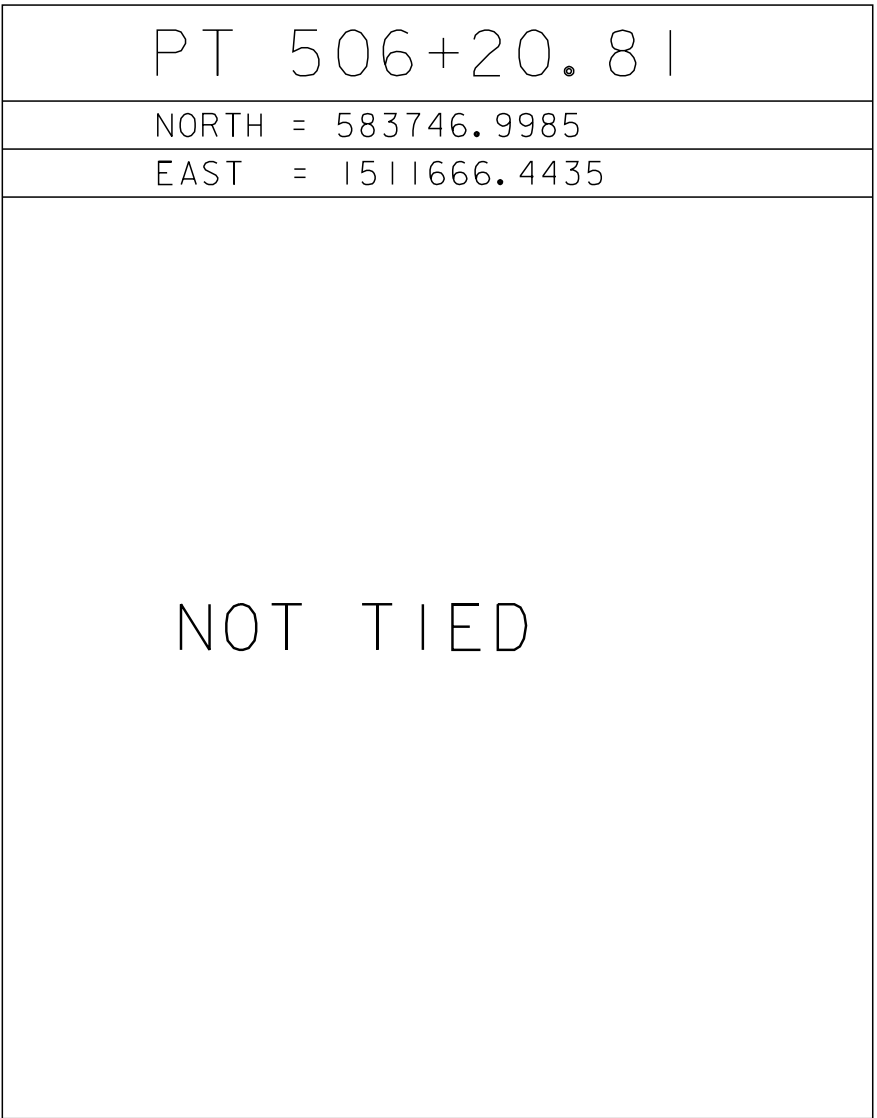
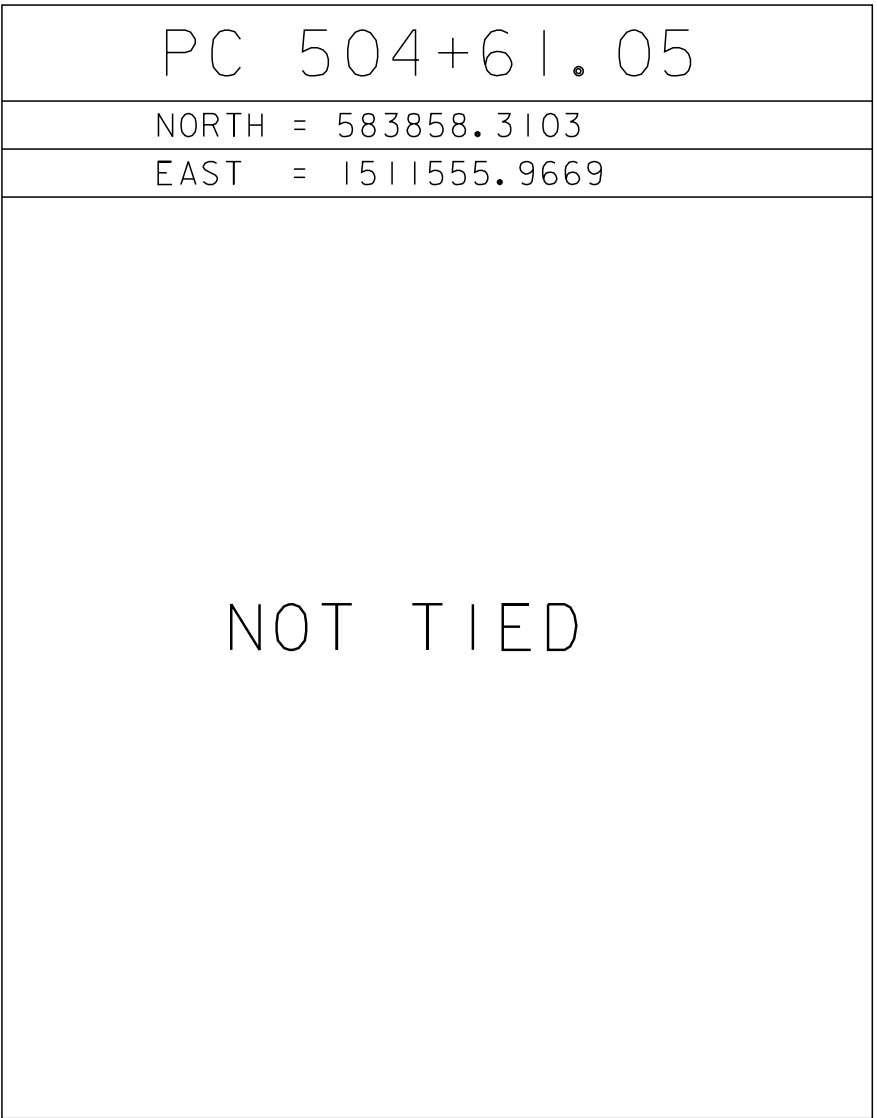
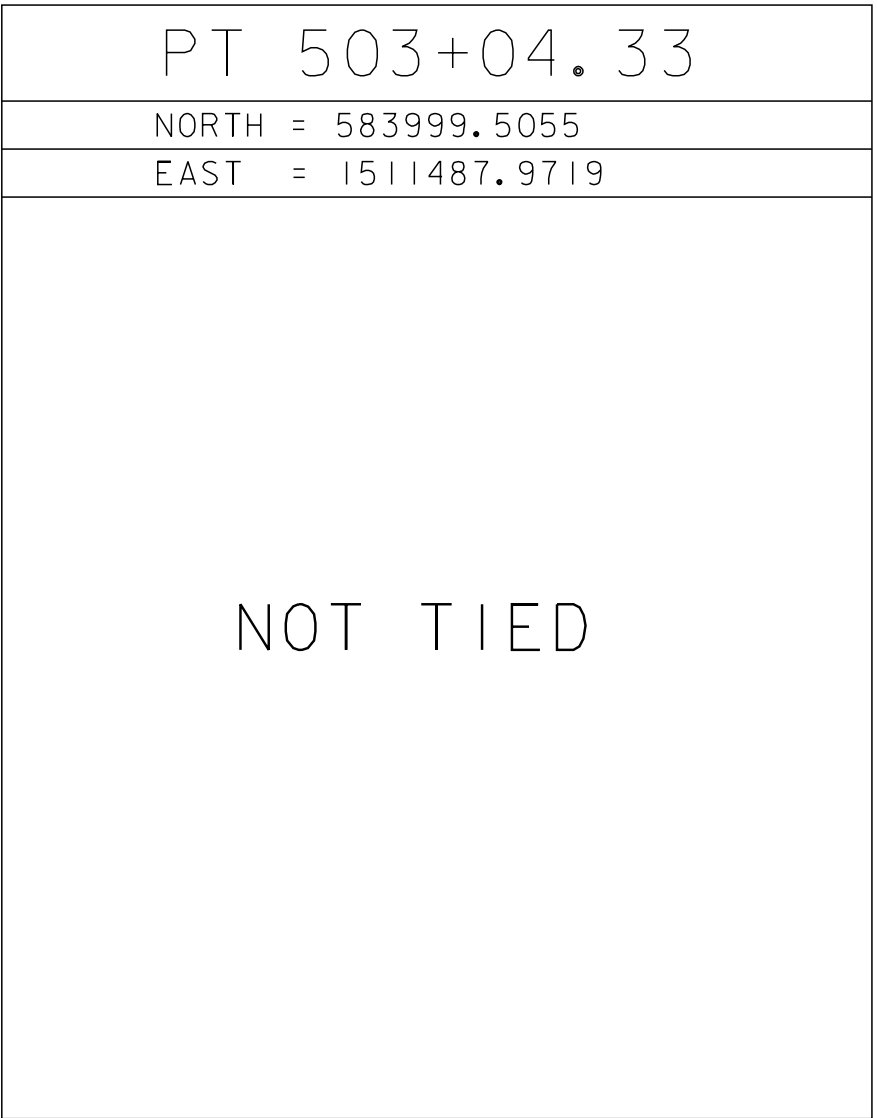
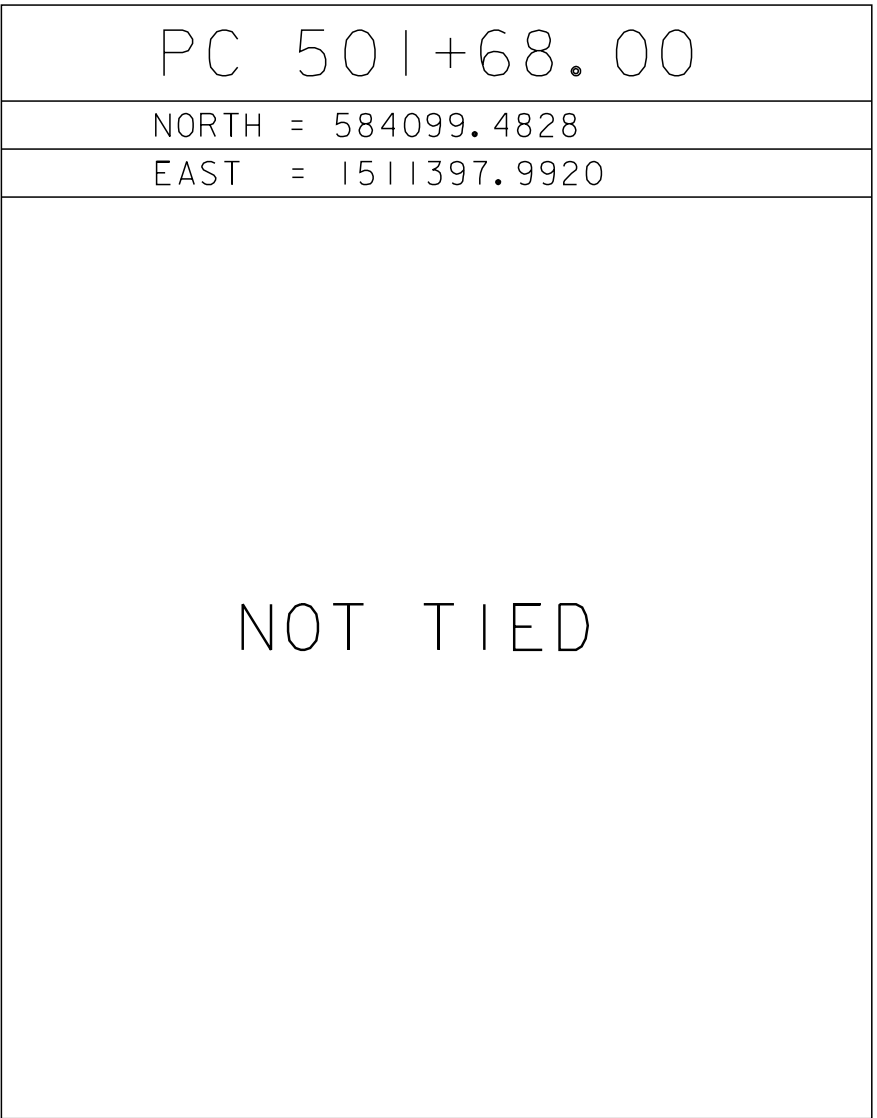
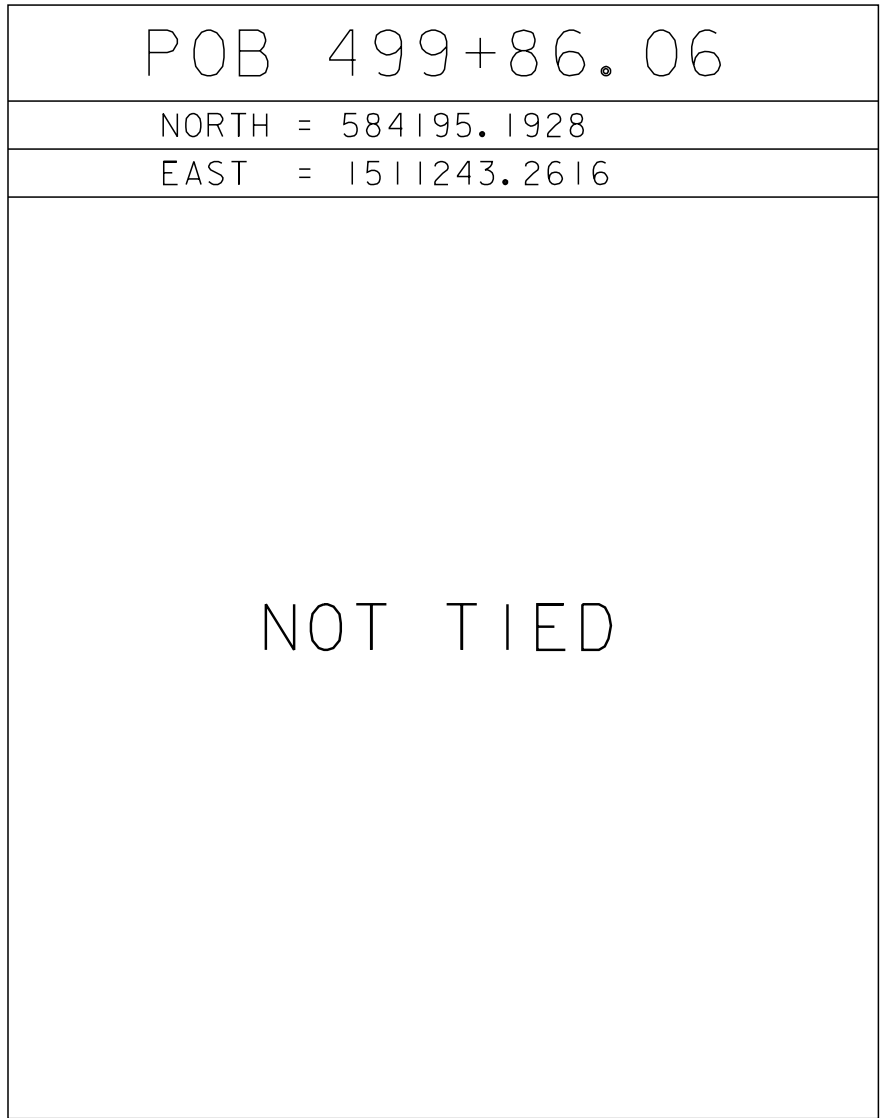


GPS CONTROL POINTS

TRAVERSE TIES



ALIGNMENT TIES



DATUM	
VERTICAL	SEE TITLE SHEET
HORIZONTAL	SEE TITLE SHEET
ADJUSTMENT	NONE

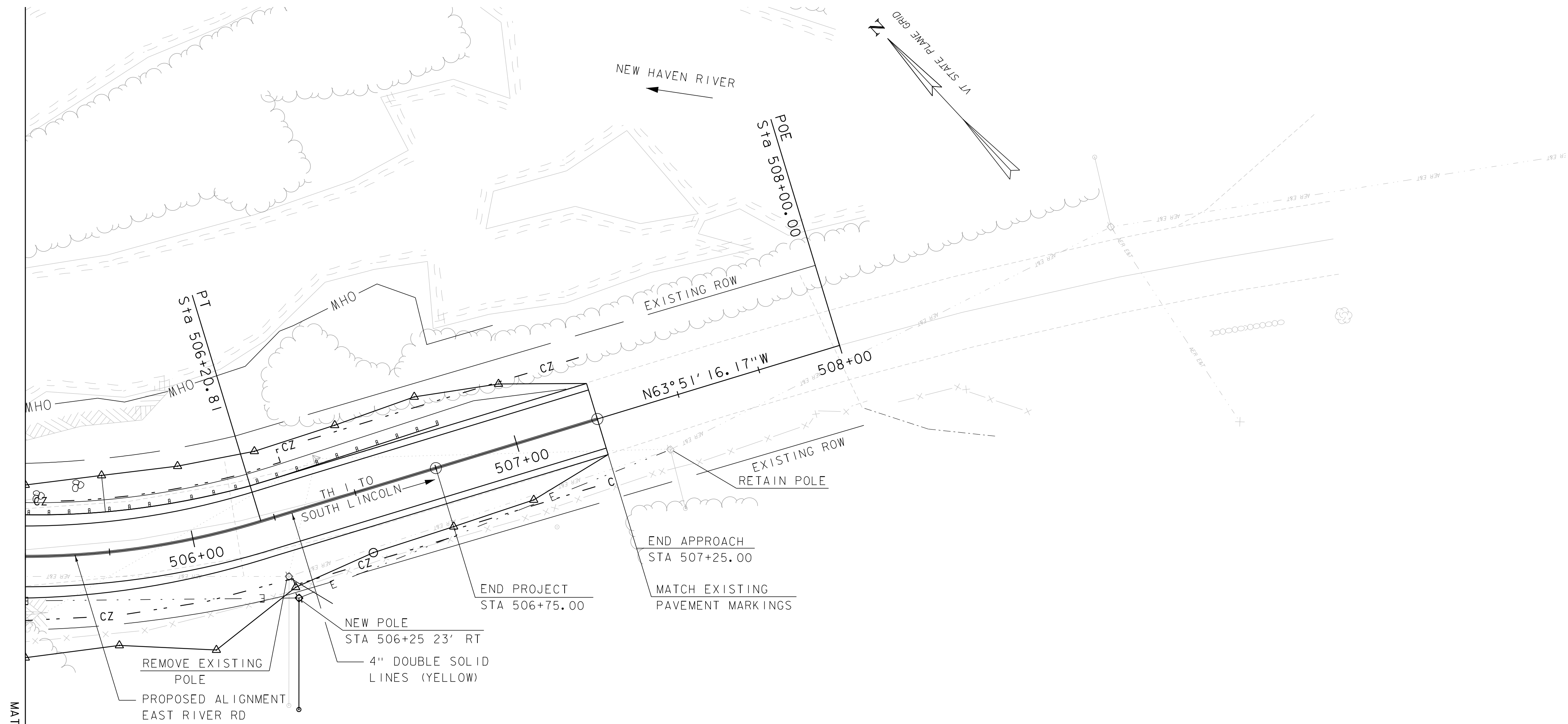
PROJECT NAME: LINCOLN  
PROJECT NUMBER: BRF 0188 (8)



FILE NAME: z10j066+1.dgn	PLOT DATE: 8-DEC-2014
PROJECT LEADER: G.K.DONINGTON	DRAWN BY: C CARNEY
DESIGNED BY: C CARNEY	CHECKED BY: R BENJAMIN
SURVEY TIE SHEET	SHEET 9 OF 62







MATCHLINE STA. 505+50

**CURVE #2**  
 Delta = 38°08'25.95"  
 D = 23°52'23.67"  
 R = 240.00'  
 T = 82.97'  
 L = 159.76'  
 E = 13.94'

COLD PLANING, BITUMINOUS PAVEMENT  
 STA. 507+12.50 - 507+25  
REMOVAL AND DISPOSAL OF GUARDRAIL  
 STA. 504+52 - 505+54 LT  
MANUFACTURED TERMINAL SECTION, TANGENT  
 STA. 506+29 - 506+79 LT

STEEL BEAM GUARDRAIL, GALVANIZED  
 STA. 504+91 - 506+29 LT

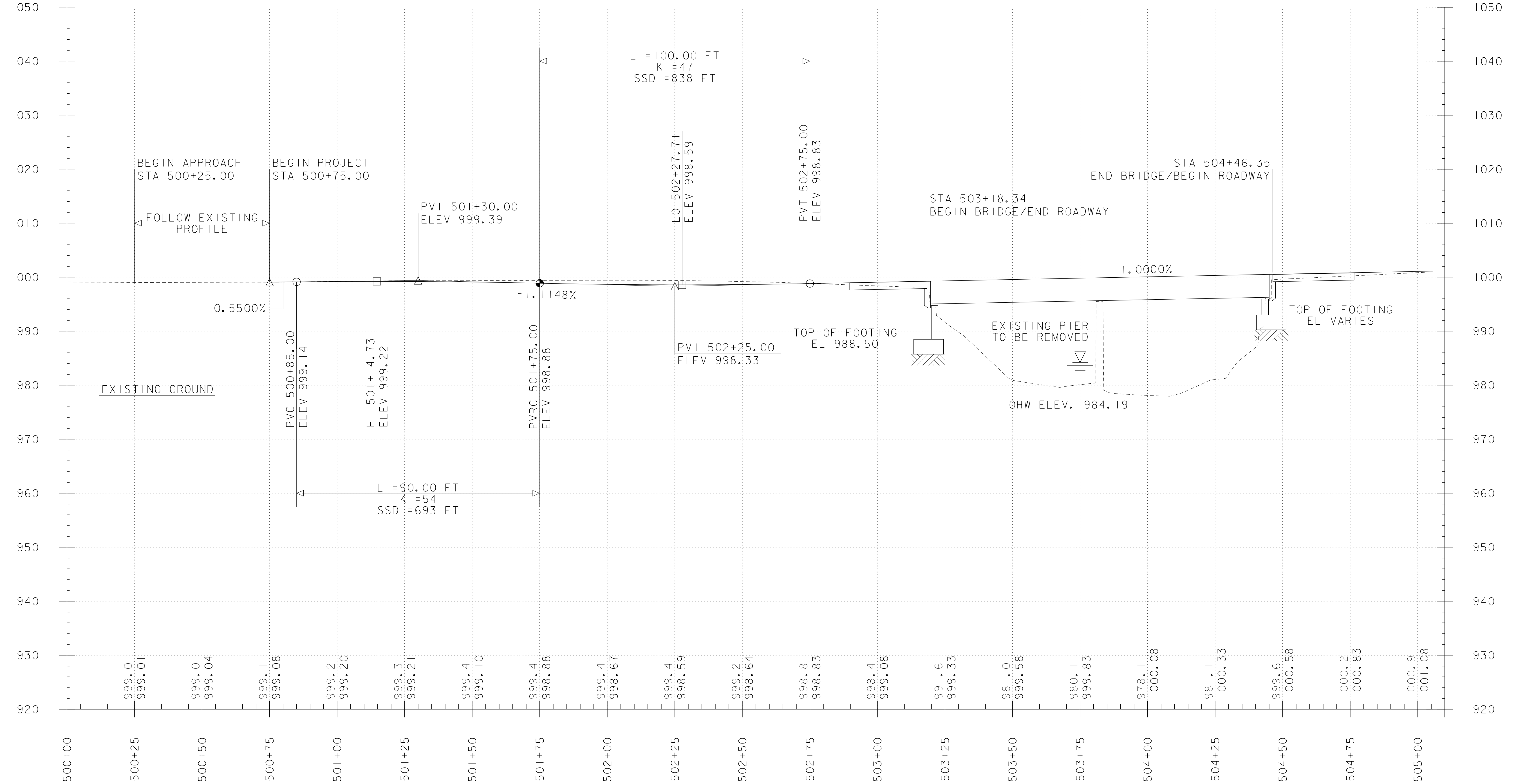
SCALE 1" = 20'-0"  
 20 0 20



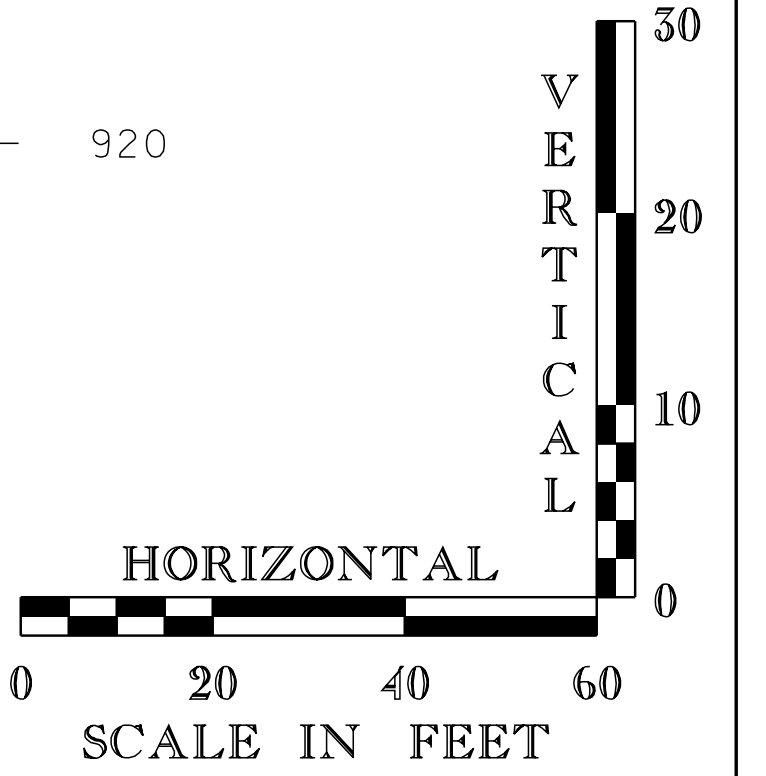
**PARSONS BRINCKERHOFF**  
 650 ELM STREET  
 MANCHESTER, NH 03101

PROJECT NAME:	LINCOLN	FILE NAME:	z10j066bdr.dgn	PLOT DATE:	8-DEC-2014
PROJECT NUMBER:	BRF 0188 (8)	PROJECT LEADER:	G.K. DONINGTON	DRAWN BY:	C. CARNEY
		DESIGNED BY:	C. CARNEY	CHECKED BY:	R. BENJAMIN
		LAYOUT SHEET (2)		SHEET 11	OF 62

PROFILE ALONG CENTERLINE TH 1



NOTE:  
1. EXISTING GRADES SHOWN TO THE NEAREST TENTH.  
2. PROPOSED GRADES SHOWN TO THE NEAREST HUNDREDTH.



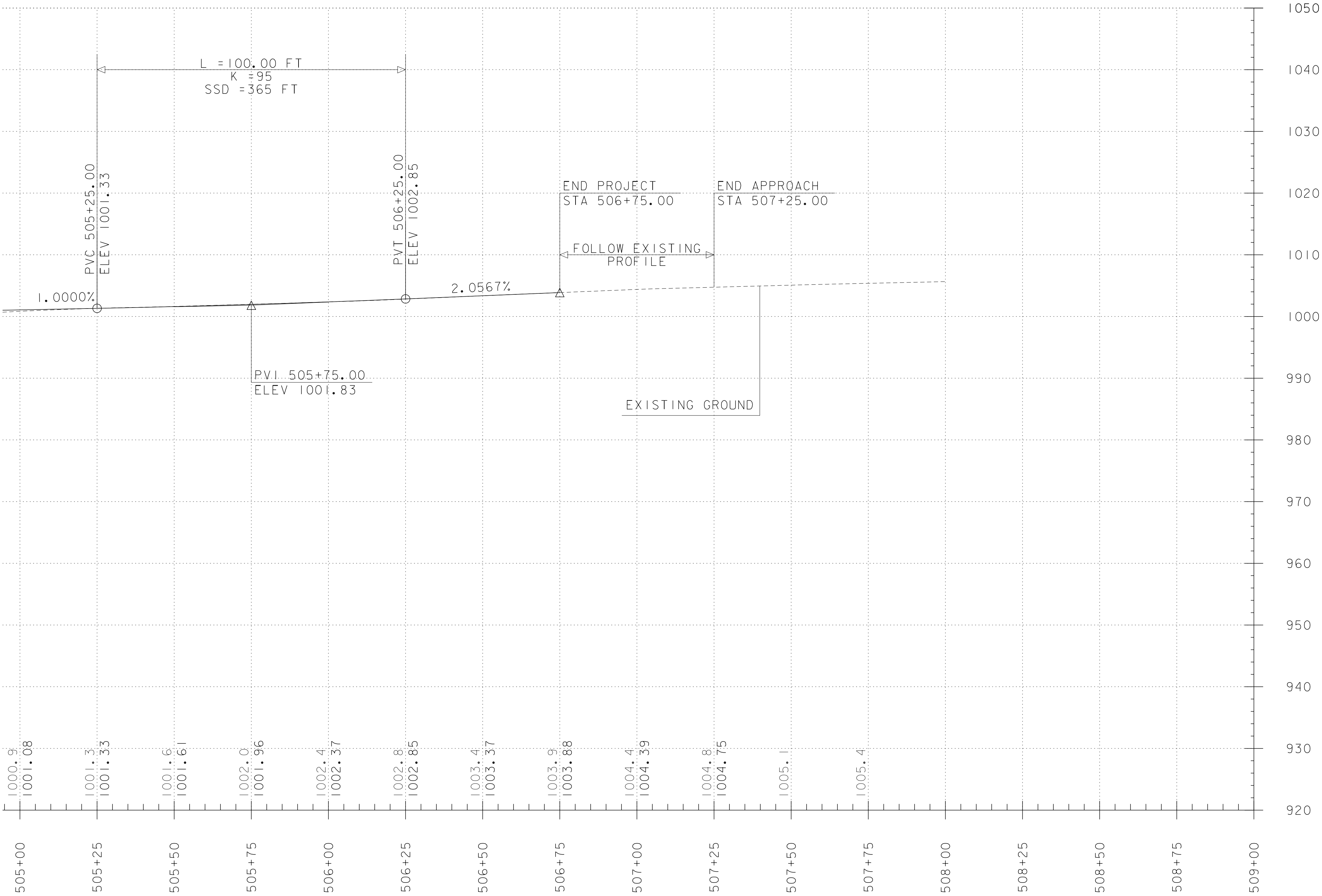
PROJECT NAME: LINCOLN  
PROJECT NUMBER: BFR 0188 (8)

**PARSONS BRINCKERHOFF**  
650 ELM STREET  
MANCHESTER, NH 03101

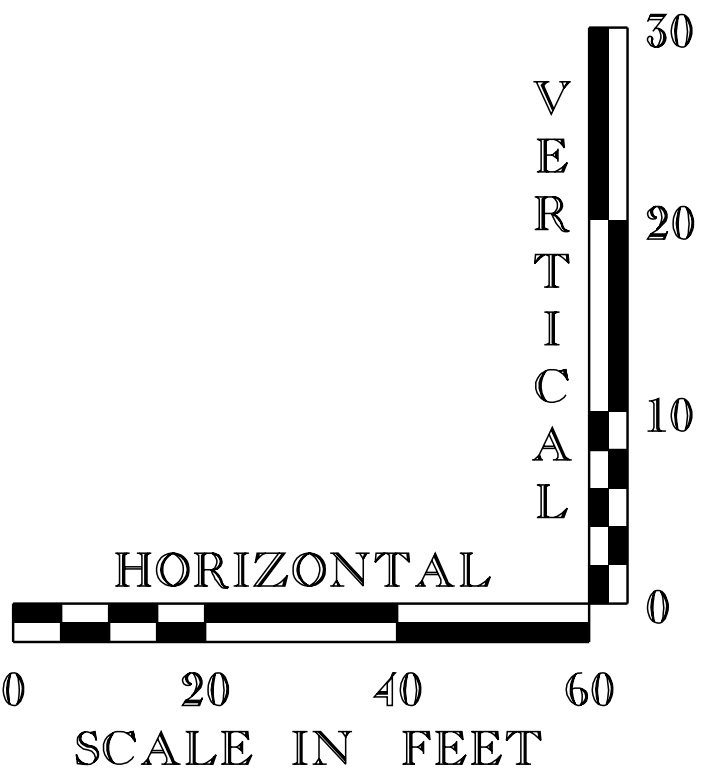
FILE NAME: z10j066pro.dgn  
PROJECT LEADER: G.K. DONINGTON  
DESIGNED BY: C CARNEY  
PROFILE SHEET (I)  
PLOT DATE: 8-DEC-2014  
DRAWN BY: C CARNEY  
CHECKED BY: R BENJAMIN  
SHEET 12 OF 62



PROFILE ALONG CENTERLINE TH 1



NOTE:  
1. EXISTING GRADES SHOWN TO THE NEAREST TENTH.  
2. PROPOSED GRADES SHOWN TO THE NEAREST HUNDREDTH.



PARSONS BRINCKERHOFF  
650 ELM STREET  
MANCHESTER, NH 03101

PROJECT NAME: LINCOLN  
PROJECT NUMBER: BRF 0188 (8)

FILE NAME: z10j066pro.dgn  
PROJECT LEADER: G.K. DONINGTON  
DESIGNED BY: C CARNEY  
PROFILE SHEET (2)

PLOT DATE: 8-DEC-2014  
DRAWN BY: C CARNEY  
CHECKED BY: R BENJAMIN  
SHEET 13 OF 62

TRAFFIC CONTROL PHASE 1

- 1. INSTALL TEMPORARY TRAFFIC SIGNS AND BARRELS AS SHOWN.
- 2. INITIATE AND MAINTAIN SINGLE LANE ALTERNATING ONE-WAY TRAFFIC THROUGHOUT DURATION OF PHASE 1.
- 3. REMOVE EXISTING POLE AT STA 504+65 RT 21' AND UTILIZE BLASTING AS NECESSARY TO PLACE NEW POLE.
- 4. FOLLOW MUTCD AND VTRANS STANDARDS WHEN BLASTING.
- 5. INSTALLATION OF TEMPORARY TRAFFIC SIGNS AND BARRELS, AND REMOVAL OF EXISTING POLE SHALL BE PAID FOR UNDER ITEM 641.10 TRAFFIC CONTROL.

CONSTRUCTION ZONE

MUST BE 500 FT MIN FROM BLASTING ZONE

DRIVEWAY ACCESS TO BE MAINTAINED AT ALL TIMES

MATCHLINE STA. 505+50

END  
BLASTING  
ZONE



500  
FEET

BLASTING  
ZONE  
AHEAD

ONE LANE  
ROAD  
1000 FT

TURN OFF  
TWO WAY RADIOS  
AND  
CELLULAR  
TELEPHONES

LEGEND

- ⊗ BARREL
- SIGN



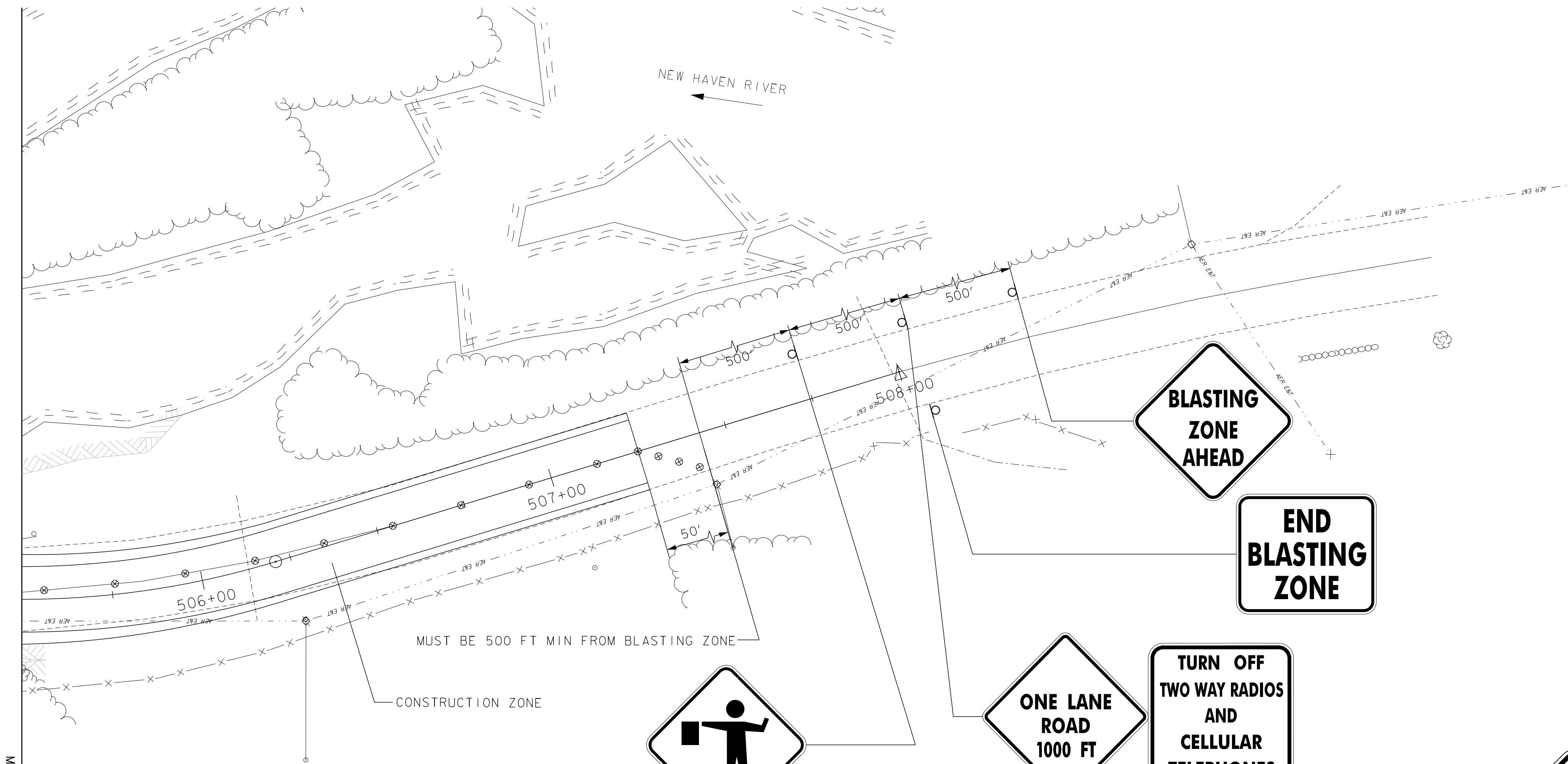
PARSONS BRINCKERHOFF  
650 ELM STREET  
MANCHESTER, NH 03101

PROJECT NAME: LINCOLN

PROJECT NUMBER: BRF 0188 (8)

FILE NAME: z10j066tcs_2d.dgn  
PROJECT LEADER: G.K. DONINGTON  
DESIGNED BY: J. KHERA  
TRAFFIC CONTROL PHASE I SHEET 1

PLOT DATE: 8-DEC-2014  
DRAWN BY: J. KHERA  
CHECKED BY: R. BENJAMIN  
SHEET 14 OF 62



TRAFFIC CONTROL PHASE 1

1. INSTALL TEMPORARY TRAFFIC SIGNS AND BARRELS AS SHOWN.
2. INITIATE AND MAINTAIN SINGLE LANE ALTERNATING ONE-WAY TRAFFIC THROUGHOUT DURATION OF PHASE 1.
3. REMOVE EXISTING POLE AT STA 504+65 RT 21' AND UTILIZE BLASTING AS NECESSARY TO PLACE NEW POLE.
4. FOLLOW MUTCD AND VTRANS STANDARDS WHEN BLASTING.
5. INSTALLATION OF TEMPORARY TRAFFIC SIGNS AND BARRELS, AND REMOVAL OF EXISTING POLE SHALL BE PAID FOR UNDER ITEM 641.10 TRAFFIC CONTROL.

LEGEND	
	BARREL
	SIGN

SCALE 1" = 20'-0"



PROJECT NAME:	LINCOLN
PROJECT NUMBER:	BRF 0188 (8)
FILE NAME:	z10j066+cs_2d.dgn
PROJECT LEADER:	G.K. DONINGTON
DESIGNED BY:	J. KHERA
TRAFFIC CONTROL PHASE 1	SHEET 2
PLOT DATE:	8-DEC-2014
DRAWN BY:	J. KHERA
CHECKED BY:	R. BENJAMIN
SHEET 15	OF 62



W22-1  
36" x 36"  
COLORS  
BLACK TEXT & BORDER  
ORANGE BACKGROUND



W22-2  
42" x 36"  
COLORS  
BLACK TEXT & BORDER  
ORANGE BACKGROUND



W20-4  
36" x 36"  
COLORS  
BLACK TEXT & BORDER  
ORANGE BACKGROUND



W22-3  
42" x 36"  
COLORS  
BLACK TEXT & BORDER  
ORANGE BACKGROUND

SIGN LEGEND

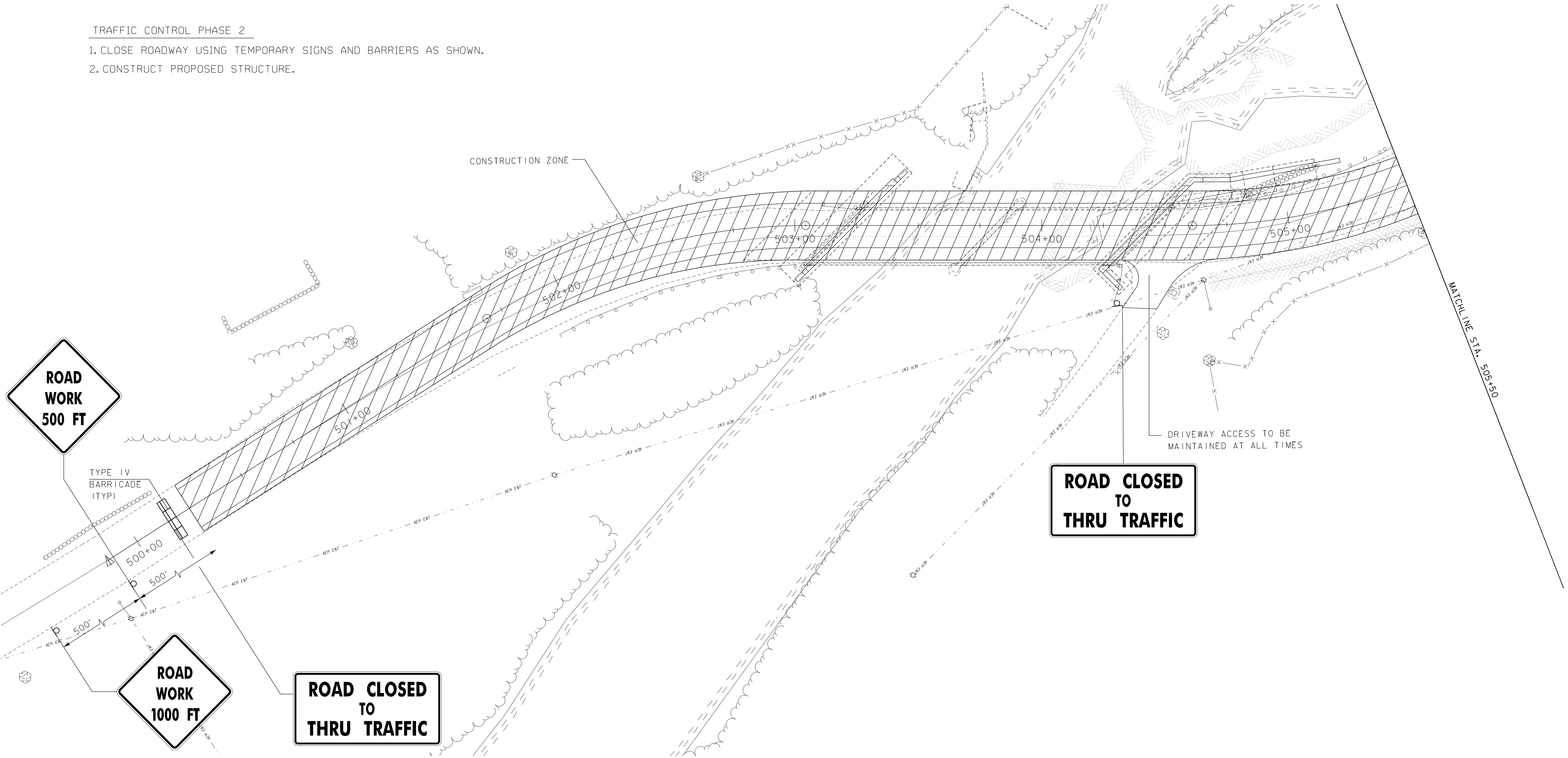


W20-7 & W16-2P  
36" x 36" 24" x 18"  
COLORS  
BLACK TEXT & BORDER  
ORANGE BACKGROUND



TRAFFIC CONTROL PHASE 2

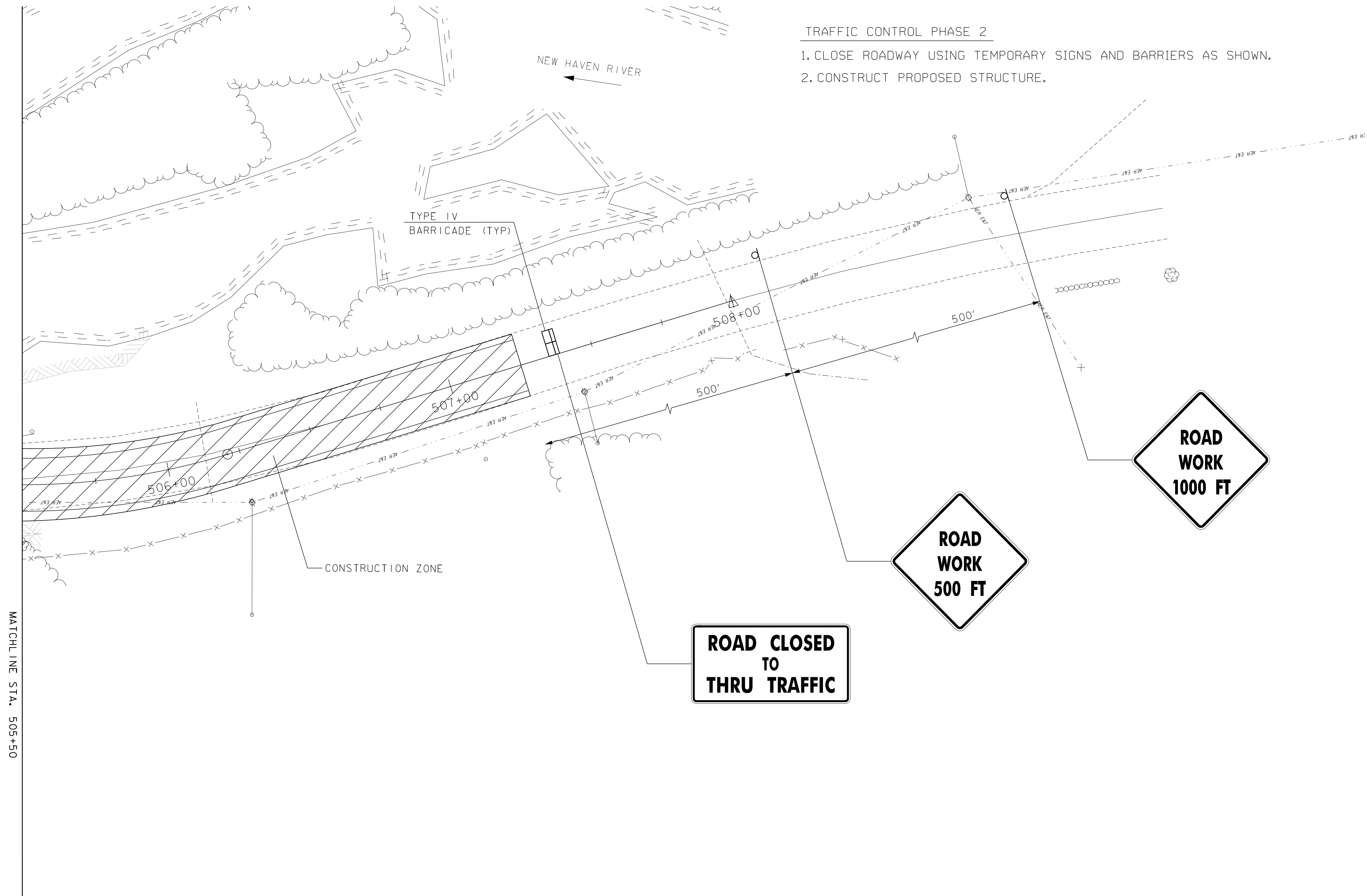
- 1. CLOSE ROADWAY USING TEMPORARY SIGNS AND BARRIERS AS SHOWN.
- 2. CONSTRUCT PROPOSED STRUCTURE.



PROJECT NAME:	LINCOLN
PROJECT NUMBER:	BRF 0188 (8)
FILE NAME:	z10j066tcs_2d.dgn
PROJECT LEADER:	G.K. DONINGTON
DESIGNED BY:	C CARNEY
TRAFFIC CONTROL PHASE 2 SHEET 1	PLOT DATE: 8-DEC-2014 DRAWN BY: C CARNEY CHECKED BY: R BENJAMIN SHEET 16 OF 62



PARSONS BRINCKERHOFF  
650 ELM STREET  
MANCHESTER, NH 03101



TRAFFIC CONTROL PHASE 2

1. CLOSE ROADWAY USING TEMPORARY SIGNS AND BARRIERS AS SHOWN.
2. CONSTRUCT PROPOSED STRUCTURE.



W20-1C  
36" x 36"  
COLORS  
BLACK TEXT & BORDER  
ORANGE BACKGROUND



W20-1B  
36" x 36"  
COLORS  
BLACK TEXT & BORDER  
ORANGE BACKGROUND



R11-4  
60" x 30"  
COLORS  
BLACK TEXT & BORDER  
WITH ORANGE BACKGROUND

SIGN LEGEND

SCALE 1" = 20'-0"  
20 0 20



PROJECT NAME: LINCOLN

PROJECT NUMBER: BRF 0188 (8)

FILE NAME: z10j066tcs_2d.dgn

PROJECT LEADER: G.K. DONINGTON

DESIGNED BY: C CARNEY

TRAFFIC CONTROL PHASE 2 SHEET 2

PLOT DATE: 8-DEC-2014

DRAWN BY: C CARNEY

CHECKED BY: R BENJAMIN

SHEET 17 OF 62

SOIL CLASSIFICATION

AASHTO	
A1	Gravel and Sand
A3	Fine Sand
A2	Silty or Clayey Gravel and Sand
A4	Silty Soil - Low Compressibility
A5	Silty Soil - Highly Compressible
A6	Clayey Soil - Low Compressibility
A7	Clayey Soil - Highly Compressible

ROCK QUALITY DESIGNATION

R.O.D. (%)	ROCK DESCRIPTION
<25	Very Poor
25 to 50	Poor
51 to 75	Fair
76 to 90	Good
>90	Excellent

SHEAR STRENGTH

UNDRAINED SHEAR STRENGTH IN P.S.F.	CONSISTENCY
<250	Very Soft
250-500	Soft
500-1000	Med. Stiff
1000-2000	Stiff
2000-4000	Very Stiff
>4000	Hard

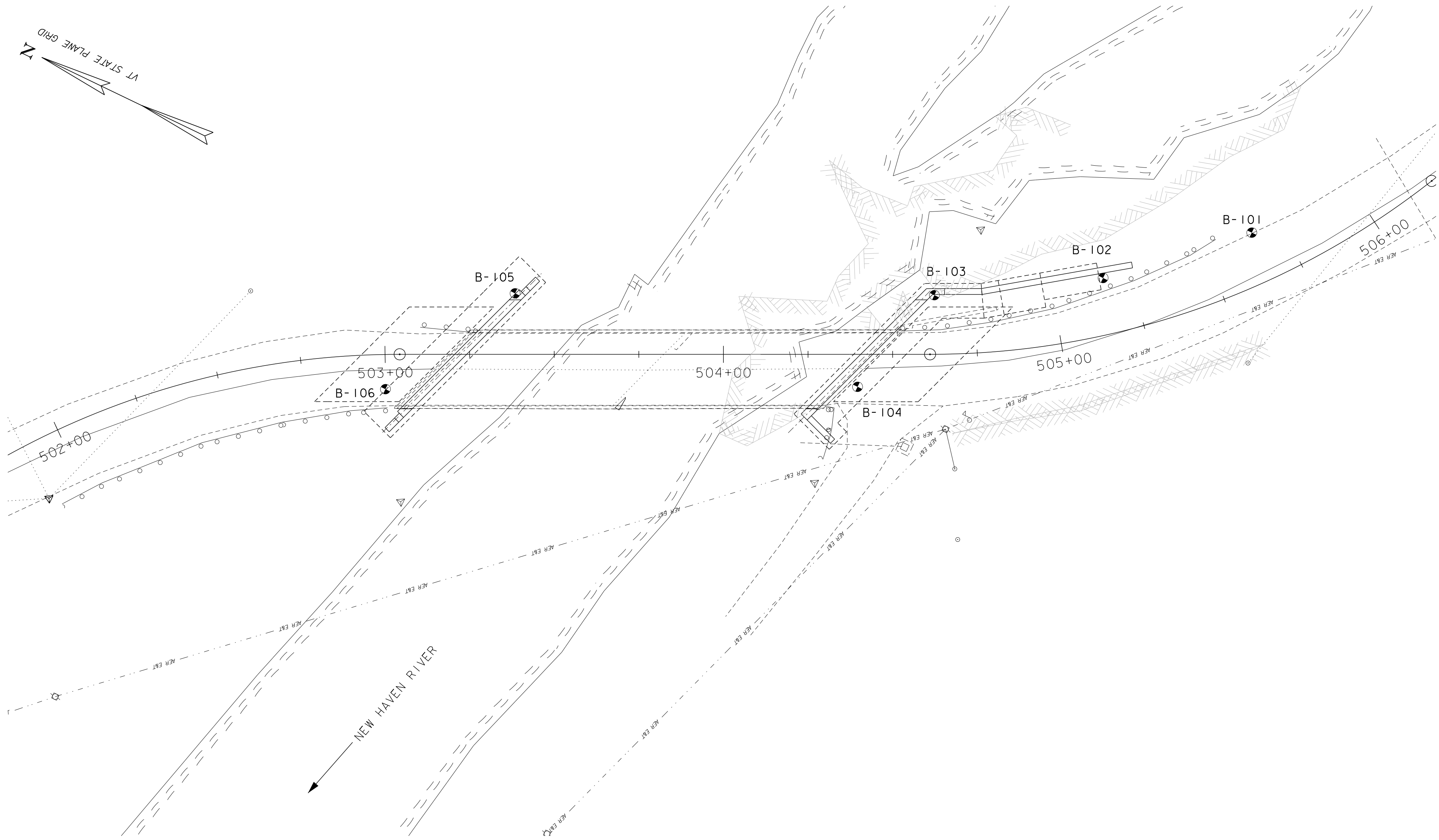
CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY

DENSITY (GRANULAR SOILS)		CONSISTENCY (COHESIVE SOILS)	
N	DESCRIPTIVE TERM	N	DESCRIPTIVE TERM
<5	Very Loose	<2	Very Soft
5-10	Loose	2-4	Soft
11-24	Med. Dense	5-8	Med. Stiff
25-50	Dense	9-15	Stiff
>50	Very Dense	16-30	Very Stiff
		31-60	Hard
		>60	Very Hard

COMMONLY USED SYMBOLS

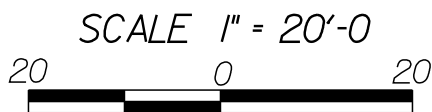
▼	Water Elevation
⊕	Standard Penetration Boring
⊙	Auger Boring
○	Rod Sounding
S	Sample
N	Standard Penetration Test
	Blow Count Per Foot For:
	2" O.D. Sampler
	1 3/8" I.D. Sampler
	Hammer Weight Of 140 Lbs.
	Hammer Fall Of 30"
VS	Field Vane Shear Test
US	Undisturbed Soil Sample
B	Blast
DC	Diamond Core
MD	Mud Drill
WA	Wash Ahead
HSA	Hollow Stem Auger
AX	Core Size 1 1/8"
BX	Core Size 1 5/8"
NX	Core Size 2 1/8"
M	Double Tube Core Barrel Used
LL	Liquid Limit
PL	Plastic Limit
PI	Plasticity Index
NP	Non Plastic
w	Moisture Content (Dry Wgt. Basis)
D	Dry
M	Moist
MTW	Moist To Wet
W	Wet
Sat	Saturated
Bo	Boulder
Gr	Gravel
Sa	Sand
SI	Silt
Cl	Clay
HP	Hardpan
Le	Ledge
NLTD	No Ledge To Depth
CNPF	Can Not Penetrate Further
TL0B	Top of Ledge Or Boulder
NR	No Recovery
Rec.	Recovery
%Rec.	Percent Recovery
RQD	Rock Quality Designation
CBR	California Bearing Ratio
<	Less Than
>	Greater Than
R	Refusal (N > 100)
VTSPG	NAD83 - See Note 7

COLOR			
blk	Black	pnk	Pink
bl	Blue	pu	Purple
brn	Brown	rd	Red
dk	Dark	tn	Tan
gry	Gray	wh	White
gn	Green	yel	Yellow
lt	Light	mltc	Multicolored
or	Orange		



HOLE NO.	STATION	OFFSET (FT)	NORTHING	EASTING	DEPTH TO BEDROCK	GROUND ELEVATION
B-101	EAST RIVER RD (TH 1) 505+65.7	14.9 LT	583788.26	1511629.61	4.50	1001.16
B-102	EAST RIVER RD (TH 1) 505+16.5	16.6 LT	583822.03	1511598.47	3.70	1000.00
B-103	EAST RIVER RD (TH 1) 504+62.4	17.5 LT	583864.74	1511572.27	0.50	985.21
B-104	EAST RIVER RD (TH 1) 504+39.6	9.6 RT	583873.44	1511538.02	11.10	999.53
B-105	EAST RIVER RD (TH 1) 503+38.4	18.0 LT	583976.61	1511519.00	9.40	993.58
B-106	EAST RIVER RD (TH 1) 502+99.9	10.3 RT	583998.83	1511476.87	12.50	998.07

NOTE:  
"B-101, B-102 AND B-103 WERE HAND STEEL SOUNDINGS THAT WERE ADVANCED TO DEPTHS OF PRESUMED BEDROCK, WHICH WAS EXPOSED ABOVE GROUND ON THE WESTERN SIDE OF THE ROADWAY.



GENERAL NOTES

- The subsurface explorations shown herein were made between Dec 8 and Dec 27, 2011 by the Agency.
- Soil and rock classifications, properties and descriptions are based on engineering interpretation from available subsurface information by the Agency and may not necessarily reflect actual variations in subsurface conditions that may be encountered between individual boring or sample locations.
- Observed water levels and/or conditions indicated are as recorded at the time of exploration and may vary according to the prevailing rainfall, methods of exploration and other factors.
- Engineering judgment was exercised in preparing the subsurface information presented herein. Analysis and interpretation of subsurface data was performed and interpreted for Agency design and estimating purposes. Presentation of the information in the Contract is intended to provide the Contractor access to the same data available to the Agency. The subsurface information is presented in good faith and is not intended as a substitute for personal investigation, independent interpretation, independent analysis or judgment by the Contractor.
- Pictorial structure details shown on the boring plan layout or soils profile are for illustrative purposes only and may not accurately portray final contract details.
- Terminology used on boring logs to describe the hardness, degree of weathering, and spacing of fractures, joints and other discontinuities in the bedrock is defined in the AASHTO Manual on Subsurface Investigations, 1988.
- Northing and Easting coordinates are shown in Vermont State Plane Grid North American Datum 1983 in meters and survey feet.

DEFINITIONS (AASHTO)

BEDROCK (LEDGE) - Rock in its native location of indefinite thickness.  
BOULDER - A rock fragment with an average dimension > 12 inches.  
COBBLE - Rock fragments with an average dimension between 3 and 12 inches.  
GRAVEL - Rounded particles of rock < 3" and > 0.075" (#10 sieve).  
SAND - Particles of rock < 0.075" (#10 sieve) and > 0.0025" (#200 sieve).  
SILT - Soil < 0.0025" (#200 sieve), non or slightly plastic and exhibits no strength when air-dried.  
CLAY - Fine grained soil, exhibits plasticity when moist and considerable strength when air-dried.

VARVED - Alternate layers of silt and clay.  
HARDPAN - Extremely dense soil, cemented layer, not softened when wet.  
MUCK - Soft organic soil (containing > 10% organic material).  
MOISTURE CONTENT - Weight of water divided by dry weight of soil.  
FLOWING SAND - Granular soil so saturated (loose) that it flows into drill casing during extraction of wash rod.  
STRIKE - Angle from magnetic north to line of intersection of bed with a horizontal plane.  
DIP - Inclination of bed with a horizontal plane.



PARSONS BRINCKERHOFF  
650 ELM STREET  
MANCHESTER, NH 03101

PROJECT NAME: LINCOLN  
PROJECT NUMBER: BRF 0188 (8)  
FILE NAME: z10j066bor.dgn  
PROJECT LEADER: G.K. DONINGTON  
DESIGNED BY: P. ARMANO  
BORING LOCATION PLAN


PLOT DATE: 8-DEC-2014  
DRAWN BY: W. GERHOLD  
CHECKED BY: A. STOCKIN  
SHEET 18 OF 62



Top of Footing  
Abutment 2  
Elev. = 993.00  
(UPPER)


Top of Footing  
Abutment 2  
Elev. = 989.00  
(LOWER)

BORING LOG 2 LINCOLN BRF 0188(8).GPJ VERMONT AOT.GDT 11/21/14

		STATE OF VERMONT AGENCY OF TRANSPORTATION CONSTRUCTION AND MATERIALS BUREAU CENTRAL LABORATORY		BORING LOG		Boring No.: <b>B-104</b>					
		LINCOLN BRF 0188(8) TH-1 BR-19				Page No.: 1 of 1 Pin No.: 10J066 Checked By: CCB					
Boring Crew: GARROW, WELLS		Type: Casing		Sampler		Groundwater Observations					
Date Started: 12/22/11 Date Finished: 12/27/11		I.D.: 4 in		SS		Date Depth (ft) Notes					
VTSPG NAD83: N 583873.44 ft E 1511538.02 ft		Hammer Wt: N.A.		140 lb.							
Station: 504+39.6 Offset: 9.60		Hammer Fall: N.A.		30 in.		No Water to Depth.					
Ground Elevation: 999.53 ft		Hammer/Rod Type: Auto/AWJ									
		Rig: CME 45C SKID		C. = 1.33							
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)		Run (Dip deg.)	Core Rec. % (RCD %)	Drill Rate minutes/ft	Blows/ft (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Asphalt Pavement, 0.0 ft - 0.7 ft									
2.5		A-1-b, SaGr, brn, Moist, Rec. = 1.7 ft					40-30-18-13 (48)	6.0	49.8	36.8	13.4
		A-1-a, Gr, gry, Wet, Rec. = 0.8 ft					14-15-12-3 (27)	9.4	77.7	17.5	4.8
5.0		A-1-a, SaGr, gry, Dry, Rec. = 1.0 ft					25-17-21-11 (38)	2.6	67.1	20.7	12.2
7.5		A-1-a, SaGr, gry, Moist, Rec. = 1.2 ft					3-4-7-6 (11)	11.8	63.8	26.0	10.2
10.0		Field Note:, Stone in sampler. Appears to be Gravel, gry, Wet NXDC, Concrete, 9.2 ft - 11.1 ft					R@2.5"				
12.5		11.1 ft - 15.1 ft, Gray, Phyllitic Schist, with some large quartz veins. Moderately hard, Unweathered, Good rock, NXMDC, RMR = 66		1 (45)	90 (83)	9					
						9					
						8					
						11					
15.0		15.1 ft - 16.1 ft, Gray, Phyllitic Schist, with some large quartz veins. Moderately hard, Unweathered, Good rock, NXMDC, RMR = 62		2 (45)	80 (70)	20					
17.5		Hole stopped @ 16.1 ft									
20.0											
22.5											
Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual. 2. N Values have not been corrected for hammer energy. C is the hammer energy correction factor. 3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.											


Top of Footing  
Abutment 1  
Elev. = 988.50

BORING LOG 2 LINCOLN BRF 0188(8).GPJ VERMONT AOT.GDT 11/21/14

		STATE OF VERMONT AGENCY OF TRANSPORTATION CONSTRUCTION AND MATERIALS BUREAU CENTRAL LABORATORY		BORING LOG		Boring No.: <b>B-105</b>					
		LINCOLN BRF 0188(8) TH-1 BR-19				Page No.: 1 of 1 Pin No.: 10J066 Checked By: CCB					
Boring Crew: GARROW, SALISBURY, THOMAS		Type: Casing		Sampler		Groundwater Observations					
Date Started: 12/08/11 Date Finished: 12/08/11		I.D.: 4 in		SS		Date Depth (ft) Notes					
VTSPG NAD83: N 583976.61 ft E 1511519.00 ft		Hammer Wt: N.A.		140 lb.							
Station: 503+38.4 Offset: -18.00		Hammer Fall: N.A.		30 in.		None taken.					
Ground Elevation: 993.58 ft		Hammer/Rod Type: Auto/AWJ									
		Rig: CME 45C SKID		C. = 1.33							
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)		Run (Dip deg.)	Core Rec. % (RCD %)	Drill Rate minutes/ft	Blows/ft (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		A-2-4, GrSiSa with grass & roots, brn, Moist, Rec. = 0.5 ft					WH-WH-WH-2 (WH)	24.8	24.9	48.4	26.7
2.5		A-1-b, SiSaGr, brn, MTD, Rec. = 0.6 ft, Broken Rock was within sample.					7-12-11-10 (23)	7.8	43.7	30.8	25.5
		Visual Classification, SiSa with Broken Rock, brn, Dry, Rec. = 0.2 ft, Insufficient sample for testing. Material similar as 6-8 ft.					9-7-9-5 (16)				
5.0		A-2-4, GrSiSa, brn, MTW, Rec. = 0.9 ft, Broken Rock was within sample.					7-12-12-17 (24)	11.0	26.0	46.9	27.1
7.5		Field Note:, NXDC, Cobbles									
10.0		9.4 ft - 12.4 ft, Light gray, Phyllitic Schist, with some quartz veins. Quartz vein at 12.1 to 12.4 ft has slight orange staining along joint. Moderately hard, Unweathered, Good rock, NXMDC, RMR = 71		1 (23)	100 (80)	7					
						7					
						5					
12.5		12.4 ft - 16.4 ft, Gray, Phyllitic Schist, with some quartz veins. Yellow/orange stained joints at 14.0 to 14.2 feet. Moderately hard, Unweathered, Good rock, NXMDC, RMR = 71		2 (7)	93 (80)	4					
						10					
						5					
15.0						5					
17.5		16.4 ft - 19.4 ft, Gray, Phyllitic Schist, with quartz veins. Orange stained joint at 16.4 feet. Moderately hard, Unweathered, Good rock, NXMDC, RMR = 71		3 (7)	80 (80)	5					
						7					
						9					
20.0		Hole stopped @ 19.4 ft									
22.5											
Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual. 2. N Values have not been corrected for hammer energy. C is the hammer energy correction factor. 3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.											

Top of Footing  
Abutment 1  
Elev. = 988.50

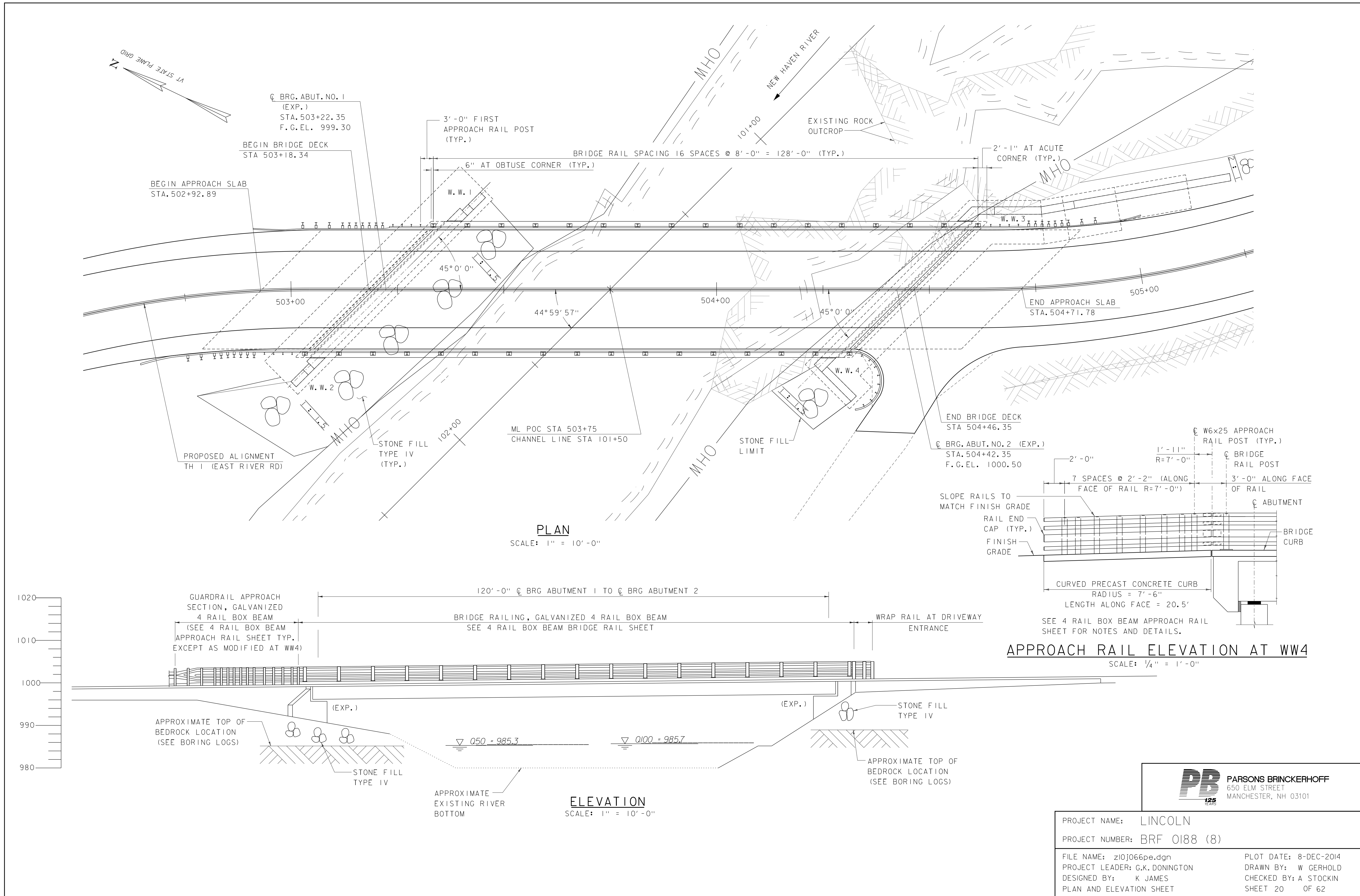
BORING LOG 2 LINCOLN BRF 0188(8).GPJ VERMONT AOT.GDT 11/21/14

		STATE OF VERMONT AGENCY OF TRANSPORTATION CONSTRUCTION AND MATERIALS BUREAU CENTRAL LABORATORY		BORING LOG		Boring No.: <b>B-106</b>					
		LINCOLN BRF 0188(8) TH-1 BR-19				Page No.: 1 of 1 Pin No.: 10J066 Checked By: CCB					
Boring Crew: GARROW, WELLS		Type: Casing		Sampler		Groundwater Observations					
Date Started: 12/21/11 Date Finished: 12/22/11		I.D.: 4 in		SS		Date Depth (ft) Notes					
VTSPG NAD83: N 583998.83 ft E 1511476.87 ft		Hammer Wt: N.A.		140 lb.		12/22/11 11.9 AM					
Station: 502+99.9 Offset: 10.30		Hammer Fall: N.A.		30 in.							
Ground Elevation: 998.07 ft		Hammer/Rod Type: Auto/AWJ									
		Rig: CME 45C SKID		C. = 1.33							
Depth (ft)	Strata (1)	CLASSIFICATION OF MATERIALS (Description)		Run (Dip deg.)	Core Rec. % (RCD %)	Drill Rate minutes/ft	Blows/ft (N Value)	Moisture Content %	Gravel %	Sand %	Fines %
		Asphalt Pavement, 0.0 ft - 1.0 ft									
		A-1-a, SaGr, brn, Wet, Rec. = 1.4 ft					12-10-9-7 (19)	8.5	61.4	29.7	8.9
2.5		A-1-a, Gr, brn, Wet, Rec. = 1.0 ft					10-4-4-2 (8)	7.4	73.4	19.5	7.1
5.0		A-1-a, Gr, gry, Wet, Rec. = 0.2 ft, Washed Stone Fill.					10-7-3-3 (10)	2.3	99.2	0.7	0.1
7.5		A-1-a, SaGr, brn, Wet, Rec. = 1.0 ft, Trace of Wood shavings.					4-R@6.0"	16.4	53.4	35.7	10.9
		Field Note:, NXDC, Cleaned out barrel. Appears to be Sandy Gravel									
10.0		Field Note:, No Recovery. Appears to be Sandy Silt					3-4-5-5 (9)				
		A-2-4, SiGrSa, gry, Wet, Rec. = 1.0 ft, Broken Rock was within sample					6-7-R@6.0"	15.8	25.2	52.6	22.2
12.5		12.5 ft - 15.5 ft, Gray, Phyllitic Schist, with some quartz veins. Moderately hard, Unweathered, Fair rock, NXMDC, RMR = 52		1 (45)	93 (12)	5					
						5					
						9					
15.0		15.5 ft - 20.5 ft, Gray, Phyllitic Schist, with some quartz veins. Moderately hard, Unweathered, Good rock, NXMDC, Yellow/orange stained joint at 17.95 ft. RMR = 69		2 (45)	100 (96)	8					
						6					
						5					
						5					
20.0		20.5 ft - 22.5 ft, Gray, Phyllitic Schist, with quartz veins. Moderately hard, Unweathered, Good rock, NXMDC, RMR = 69		3 (45)	95 (95)	5					
						5					
22.5		Hole stopped @ 22.5 ft									
Notes: 1. Stratification lines represent approximate boundary between material types. Transition may be gradual. 2. N Values have not been corrected for hammer energy. C is the hammer energy correction factor. 3. Water level readings have been made at times and under conditions stated. Fluctuations may occur due to other factors than those present at the time measurements were made.											

PROJECT NAME: LINCOLN  
PROJECT NUMBER: BRF 0188 (8)

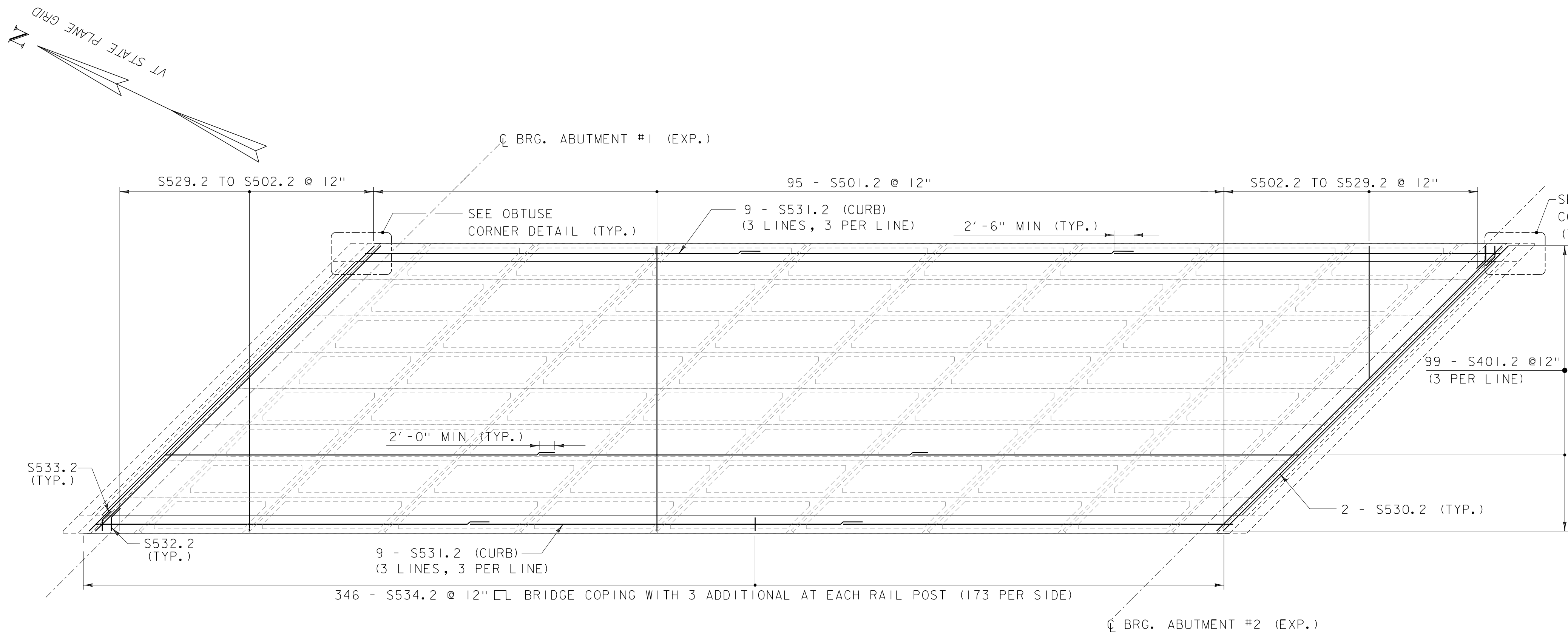
FILE NAME: z10j066bor.dgn  
PROJECT LEADER: G.K. DONINGTON  
DESIGNED BY: P ARMANO  
BORING LOG SHEET

PLOT DATE: 8-DEC-2014  
DRAWN BY: W GERHOLD  
CHECKED BY: A STOCKIN  
SHEET 19 OF 62



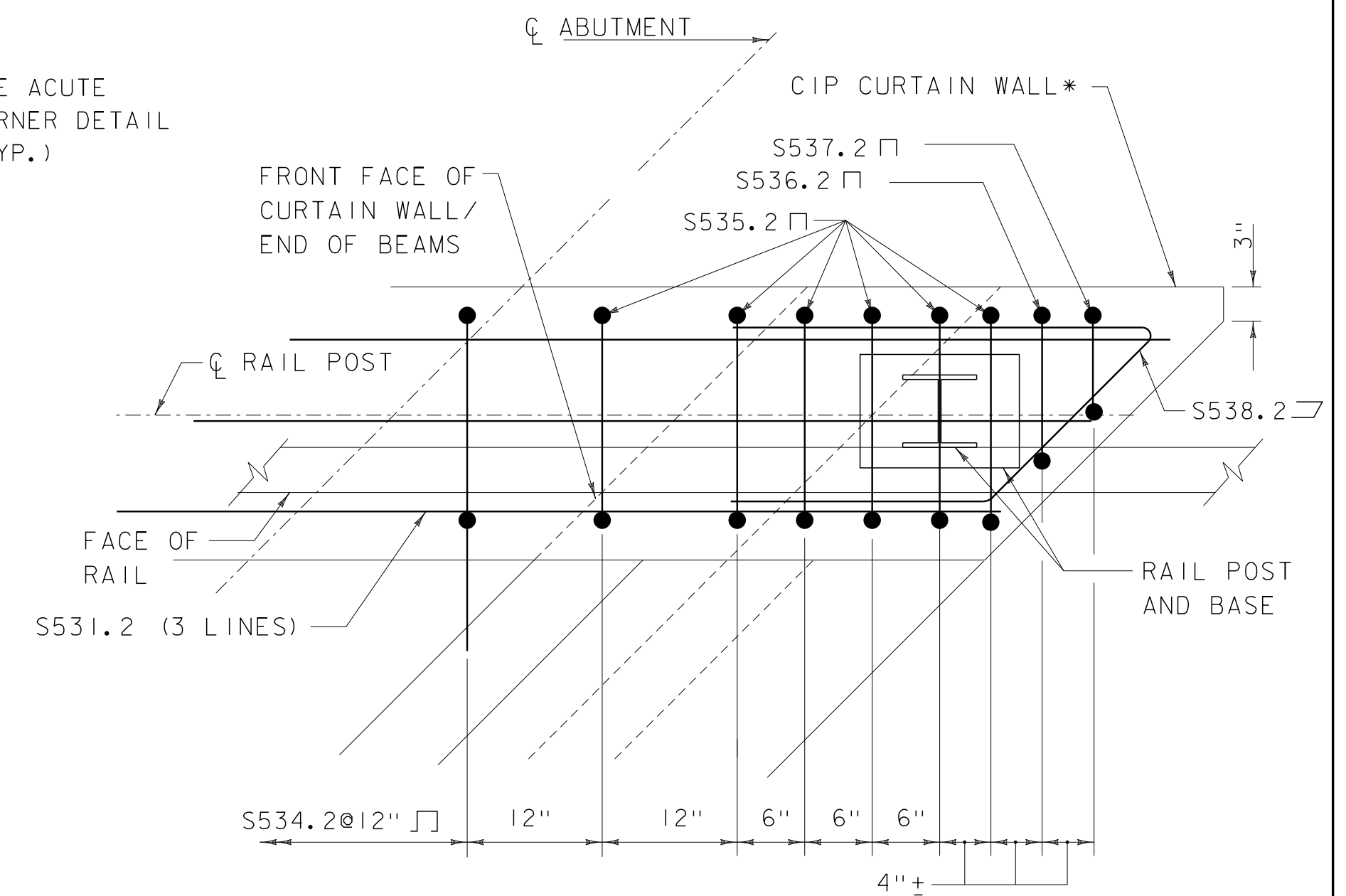






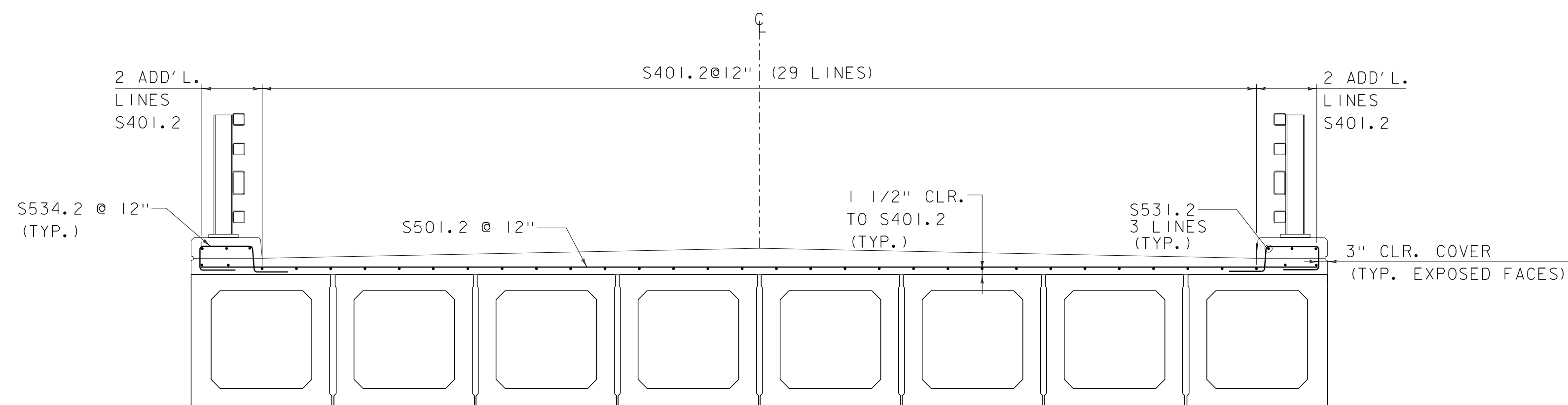
## DECK REINFORCING PLAN

SCALE: 1/8" = 1'-0"



## ACUTE CORNER DETAIL

SCALE: 1" = 1'-0"

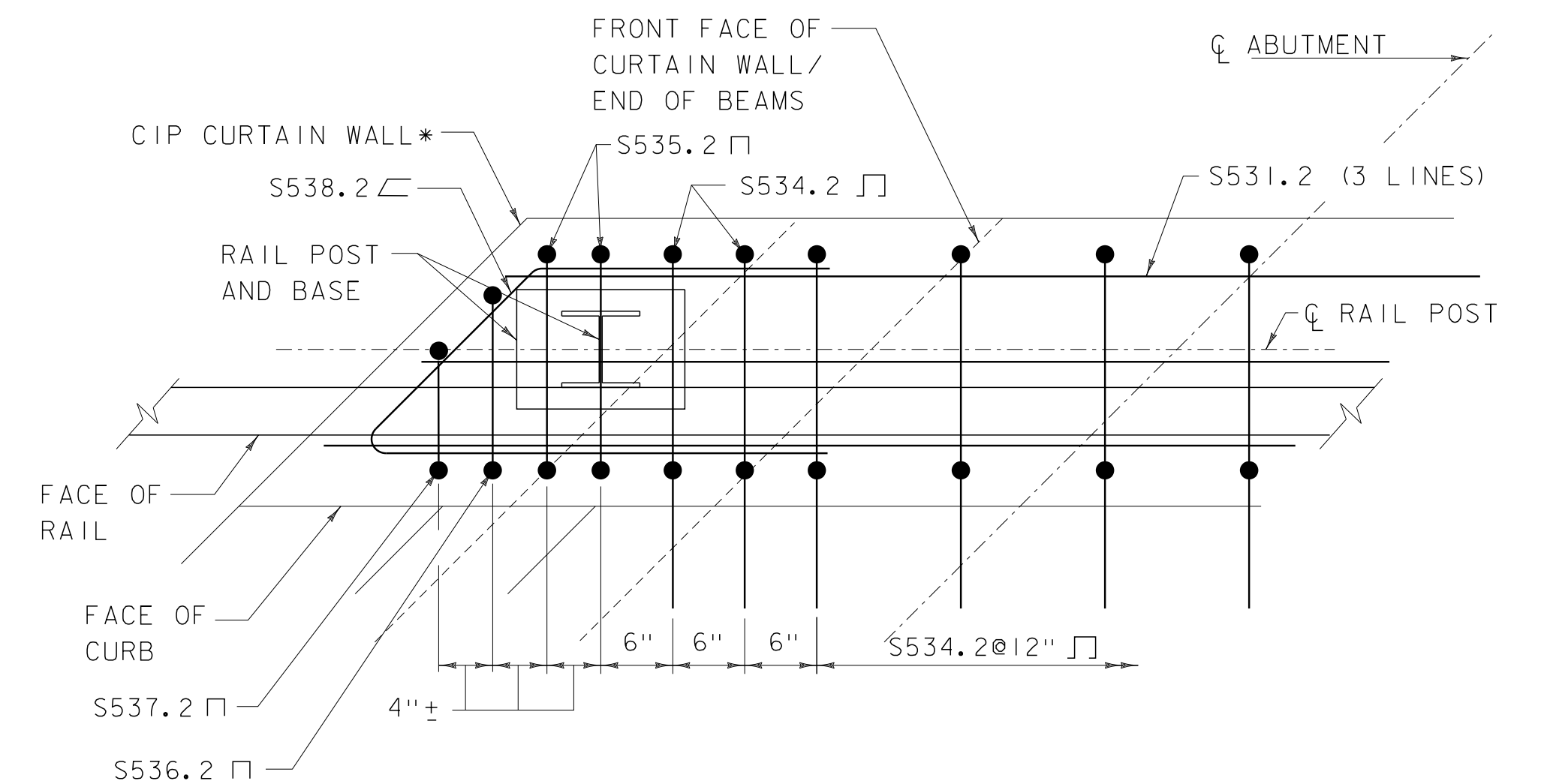


## DECK REINFORCING TYPICAL SECTION

SCALE: 3/8" = 1'-0"

### NOTE:

ANCHOR ASSEMBLY FOR EACH BRIDGE RAIL POST SHALL BE INSTALLED PRIOR TO PLACEMENT OF BRIDGE DECK OVERLAY.



## OBTUSE CORNER DETAIL

SCALE: 1" = 1'-0"

* SEE CURTAIN WALL DETAILS SHEET FOR REINFORCEMENT IN CURTAIN WALL.



PARSONS BRINCKERHOFF  
650 ELM STREET  
MANCHESTER, NH 03101

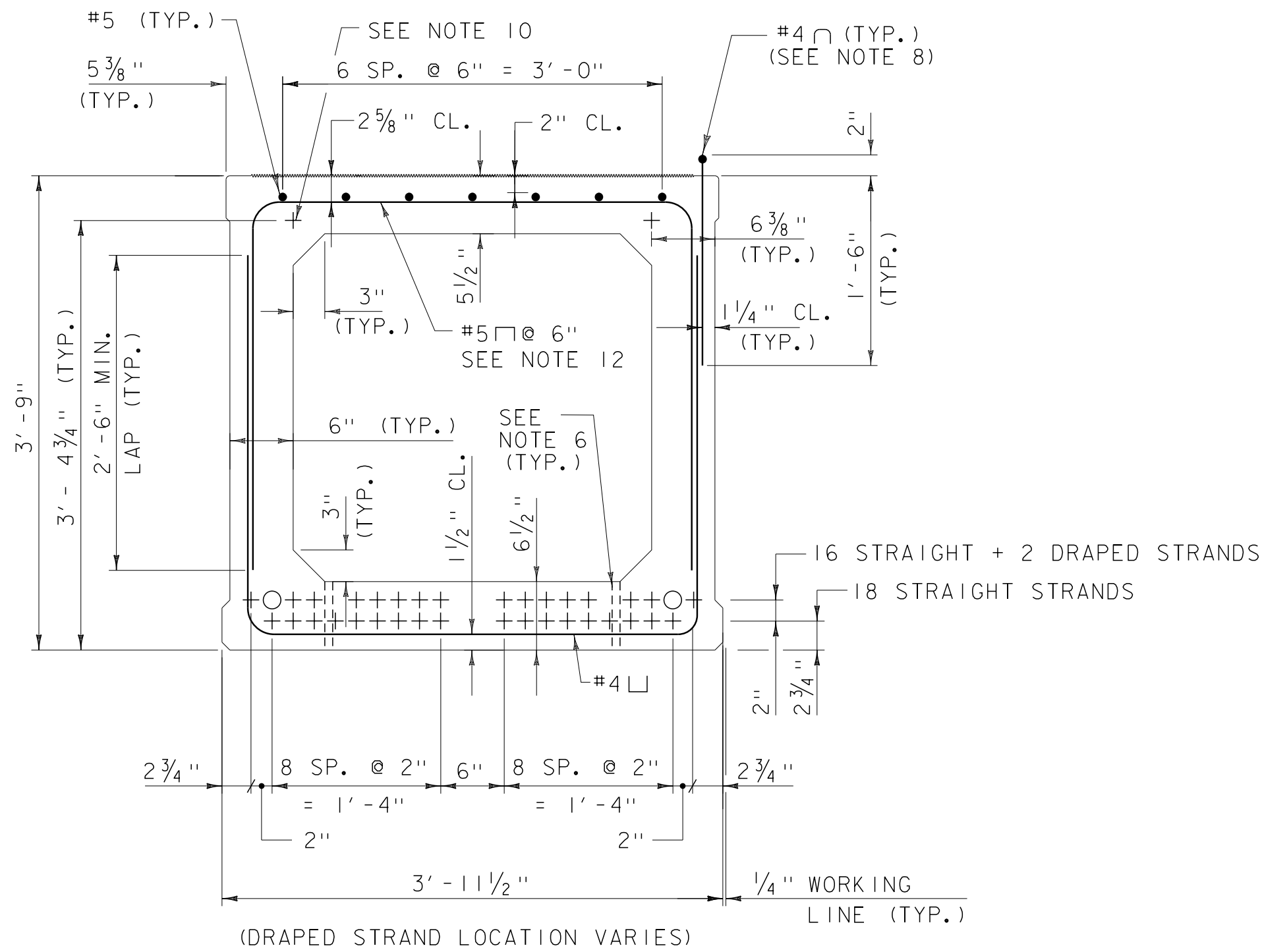
PROJECT NAME: LINCOLN

PROJECT NUMBER: BRF 0188 (8)

FILE NAME: z10j066sup2.dgn  
PROJECT LEADER: G.K. DONINGTON  
DESIGNED BY: R. GAUDREAU  
DECK REINFORCEMENT SHEET

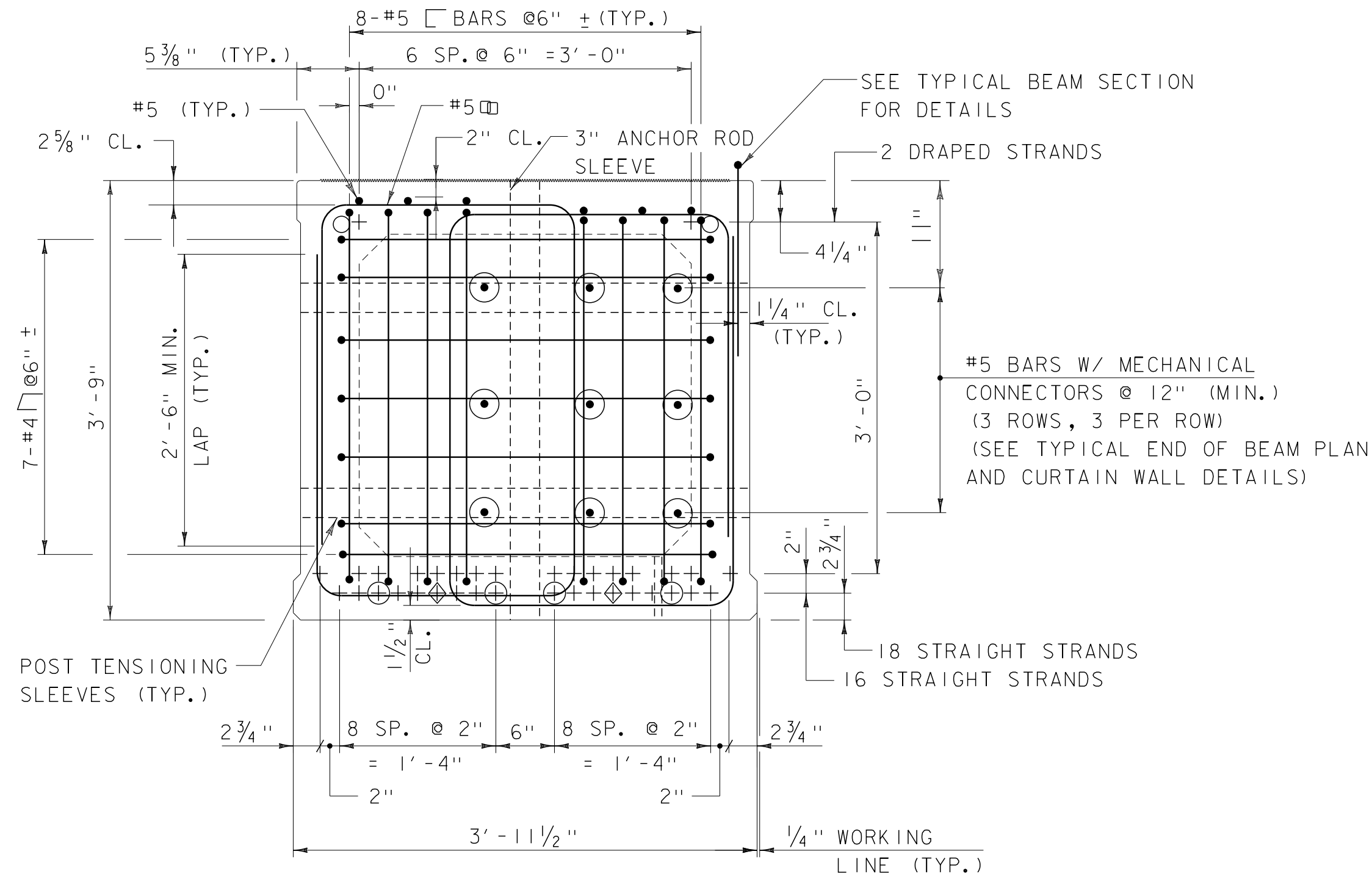
PLOT DATE: 8-DEC-2014  
DRAWN BY: R. GAUDREAU  
CHECKED BY: A. STOCKIN  
SHEET 22 OF 62





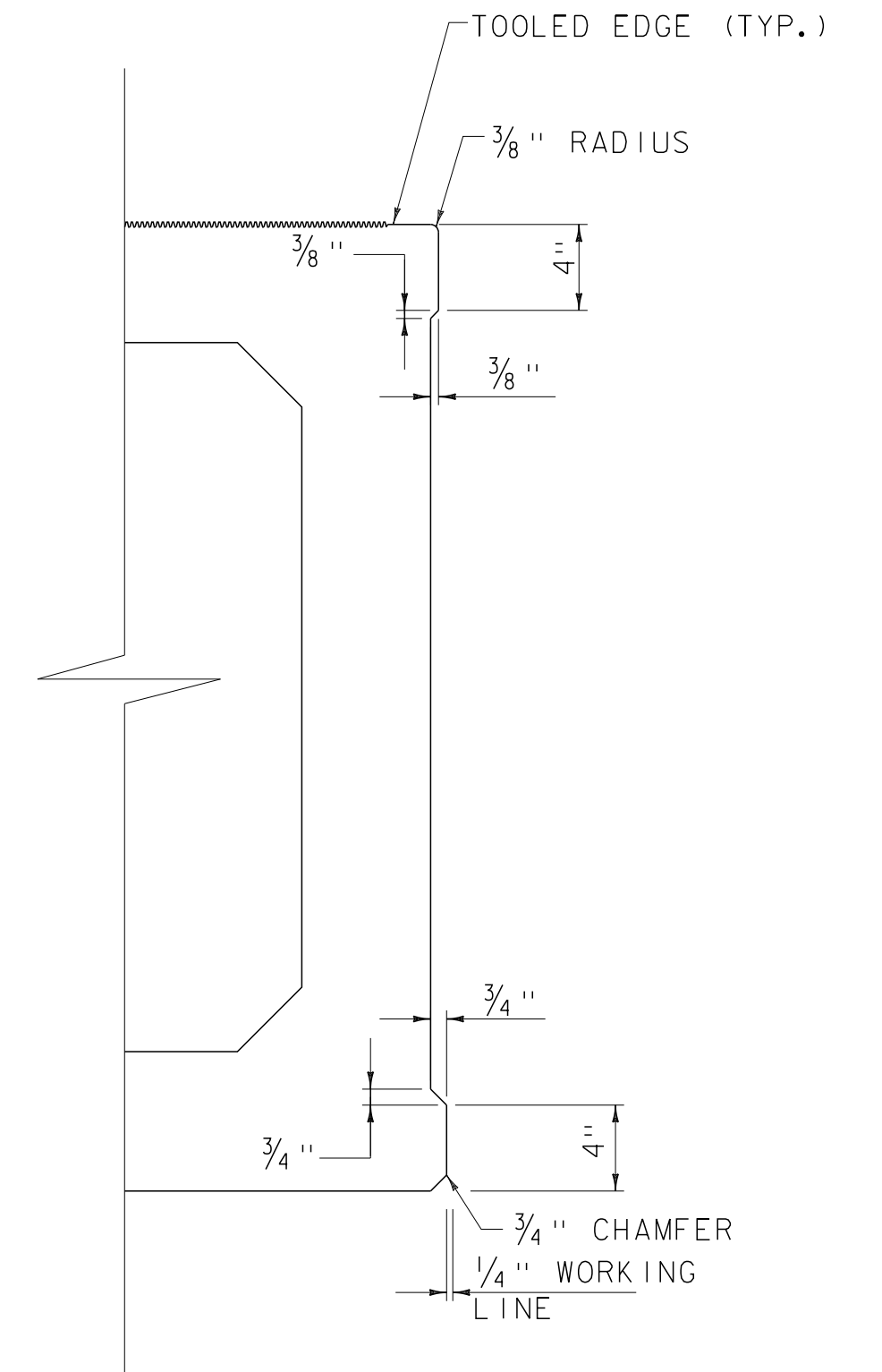
**TYPICAL BEAM SECTION**

SCALE: 1" = 1'-0"



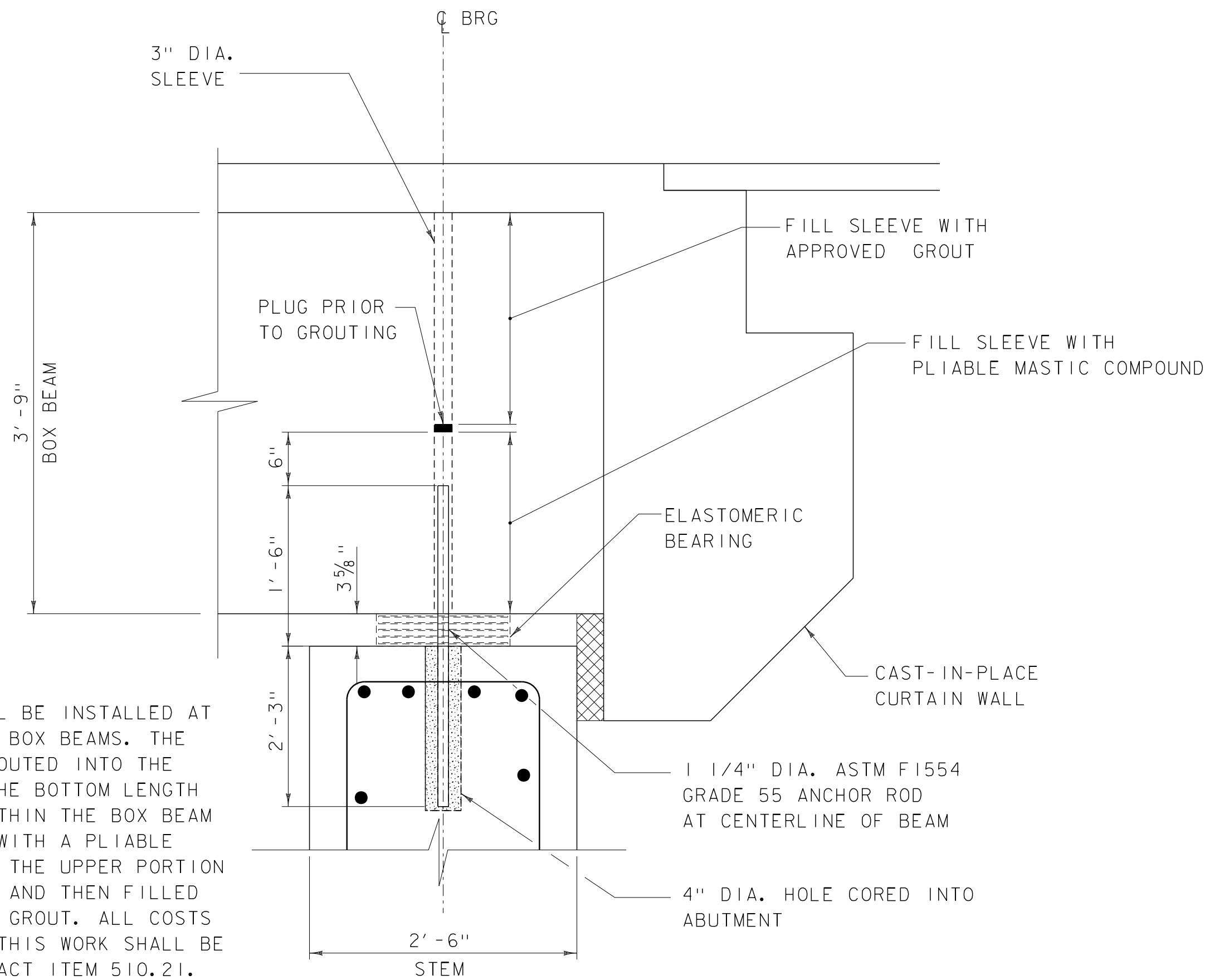
**TYPICAL SECTION AT BEAM END**

SCALE: 1" = 1'-0"



**SHEAR KEY DETAIL**

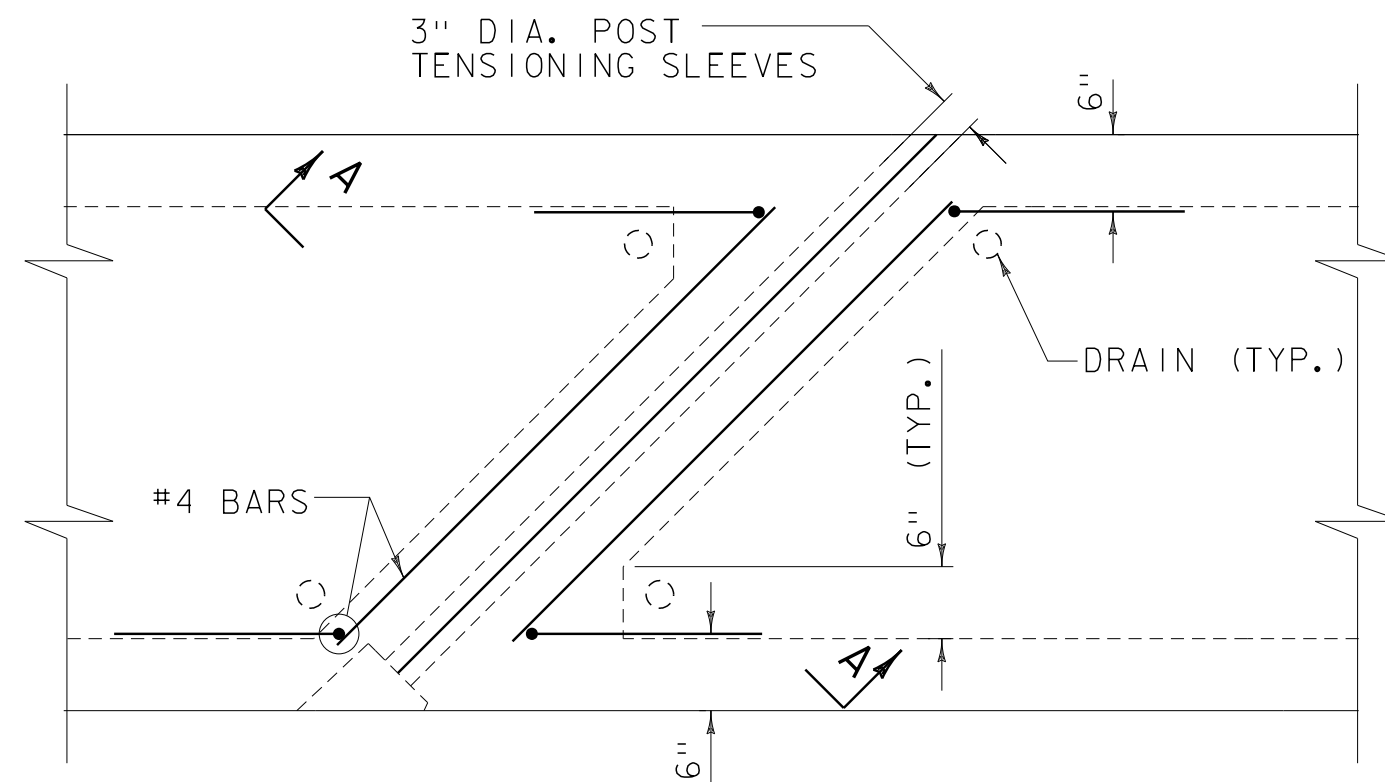
SCALE: 1 1/2" = 1'-0"



**BEAM ANCHOR DETAIL**

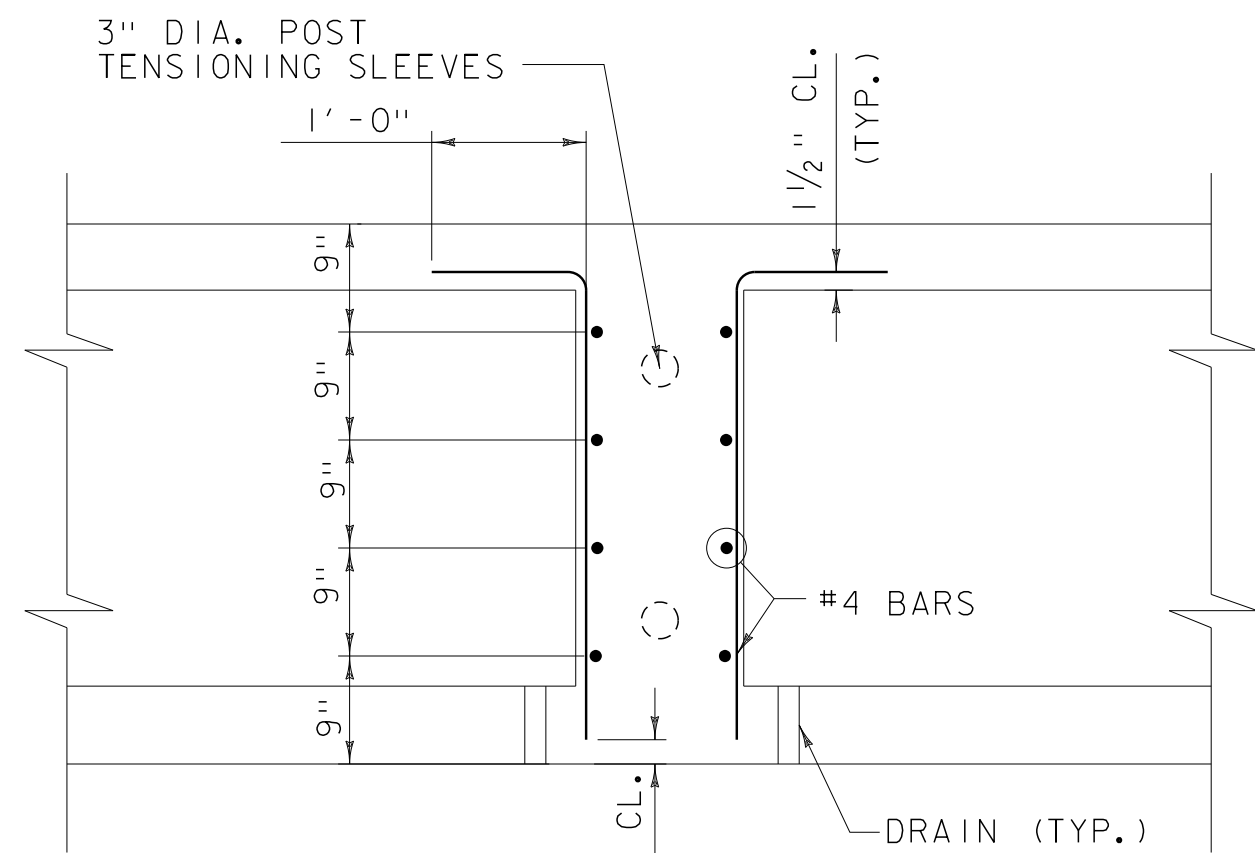
SCALE: 1" = 1'-0"

NOTE:  
ANCHOR RODS SHALL BE INSTALLED AT BOTH ENDS OF ALL BOX BEAMS. THE RODS SHALL BE GROUTED INTO THE ABUTMENT STEM. THE BOTTOM LENGTH OF THE SLEEVE WITHIN THE BOX BEAM SHALL BE FILLED WITH A PLIABLE MASTIC COMPOUND. THE UPPER PORTION SHALL BE PLUGGED AND THEN FILLED WITH AN APPROVED GROUT. ALL COSTS ASSOCIATED WITH THIS WORK SHALL BE PAID UNDER CONTRACT ITEM 510.21.



**PLAN DIAPHRAGM REINFORCING**

SCALE: 3/4" = 1'-0"



**SECTION A-A**

SCALE: 3/4" = 1'-0"

REINFORCING SHOWN IN THIS DIAPHRAGM REINFORCING PLAN IS IN ADDITION TO THAT SHOWN IN THE TYPICAL BEAM SECTION. REINFORCEMENT SHOWN IN THE TYPICAL BEAM SECTION IS OMITTED HERE FOR CLARITY.

- NOTES:
1. + DENOTES STRAIGHT 0.6" DIAMETER PRESTRESSING STRANDS.
  2. o DENOTES DRAPED 0.6" DIAMETER PRESTRESSING STRANDS.
  3. ⊕ DENOTES DEBONDED STRANDS 5'-0" AT EACH END OF BEAM.
  4. ⊕ DENOTES DEBONDED STRANDS 7'-0" AT EACH END OF BEAM.
  5. AT EACH END OF BEAM, PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH END OF BEAM.
  6. 3/4" DIA. DRAIN (NON FERROUS MATERIAL) PLACED AT ALL 4 CORNERS OF EACH VOID. LOCATE TO AVOID PRESTRESSING STRANDS.
  7. SEE TYPICAL END OF BEAM PLAN FOR STIRRUP SPACING.
  8. HORIZONTAL SHEAR REINFORCEMENT EXTENDING FROM THE TOP OF THE BEAM INTO THE DECK OVERLAY SHALL BE PLACED AS SHOWN IN THE TYPICAL BEAM SECTIONS FOR BEAMS 2 TO 8. BEAM 1 SHALL HAVE AN ADDITIONAL LINE OF HORIZONTAL SHEAR REINFORCEMENT LOCATED SYMMETRICALLY ON THE OTHER SIDE OF THE BEAM.
  9. ⊙ DENOTES MECHANICAL CONNECTORS FOR #5 BARS IN END OF BOX BEAM AND CURTAIN WALL.
  10. TWO STRAIGHT STRANDS IN TOP OF BOX BEAM SHALL BE TENSIONED TO 2 KIPS EACH.
  11. ESTIMATED BEAM WEIGHT = 159,000 LBS (INTERIOR) 163,000 LBS (EXTERIOR).
  12. LEG LENGTHS FOR ALL #5 @ 6" IN THE TOP FLANGE OF THE BOX BEAM SHALL BE THE SAME, AND SHALL PROVIDE THE 2'-6" MIN LAP WHERE LAPPED WITH #4 FROM THE BOTTOM FLANGE.



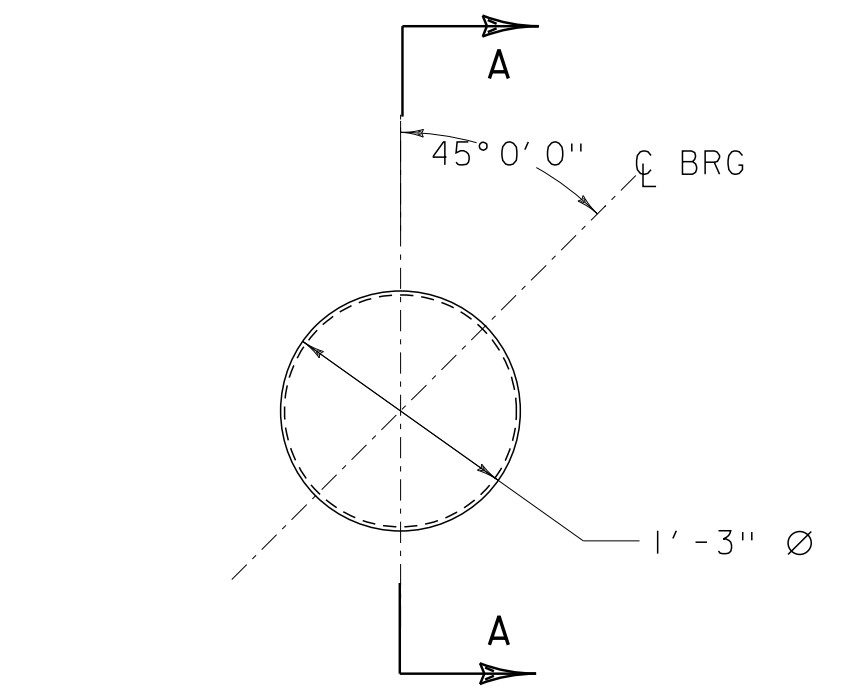
PROJECT NAME: LINCOLN

PROJECT NUMBER: BRF 0188 (8)

FILE NAME: z10j066boxbeam.dgn  
PROJECT LEADER: G.K. DONINGTON  
DESIGNED BY: K JAMES  
BOX BEAM DETAILS SHEET 1

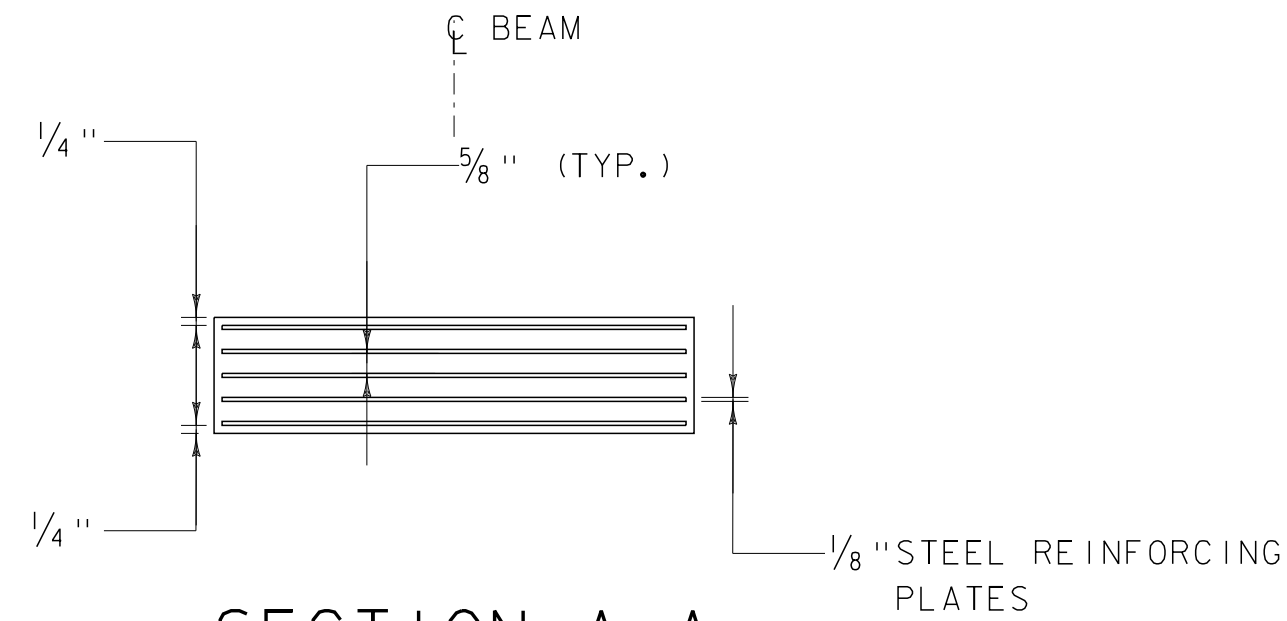
PLOT DATE: 8-DEC-2014  
DRAWN BY: W GERHOLD  
CHECKED BY: A STOCKIN  
SHEET 23 OF 62





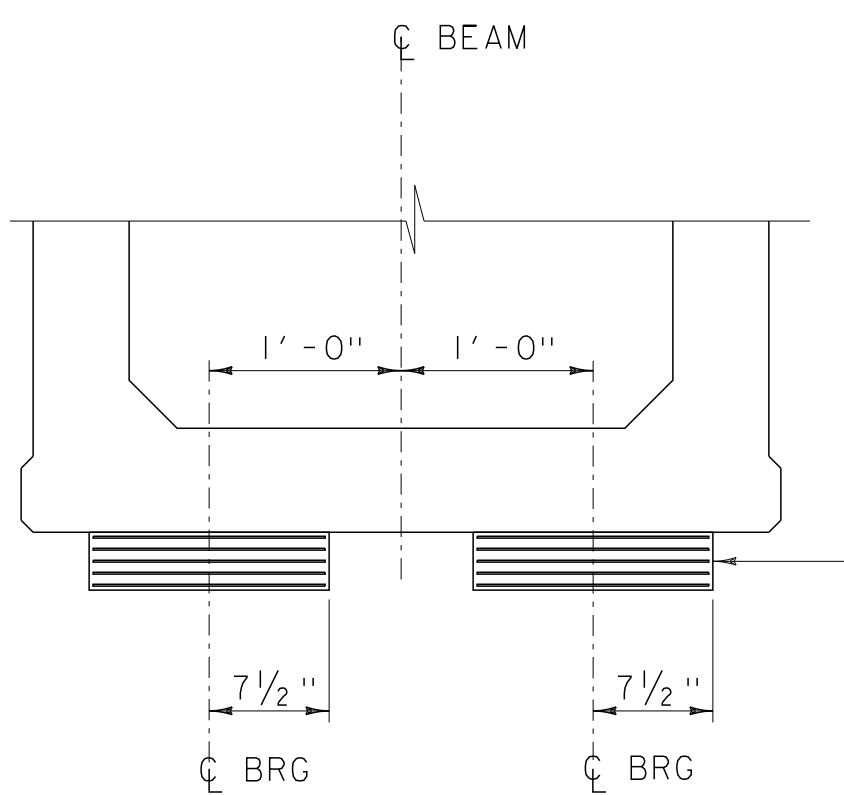
**PLAN - BEARING PAD**

SCALE: 1" = 1'-0"

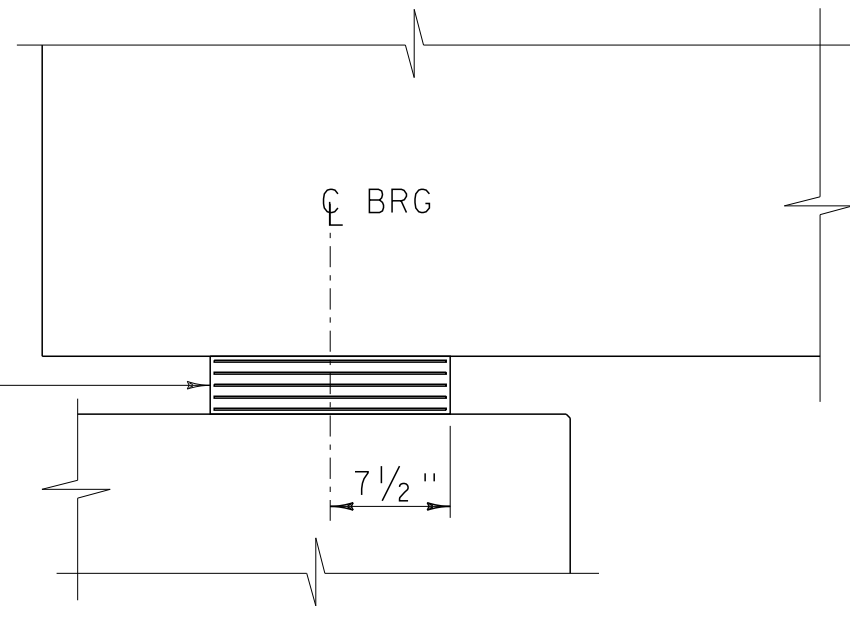


**SECTION A-A**

SCALE: 2" = 1'-0"



**FRONT ELEVATION**



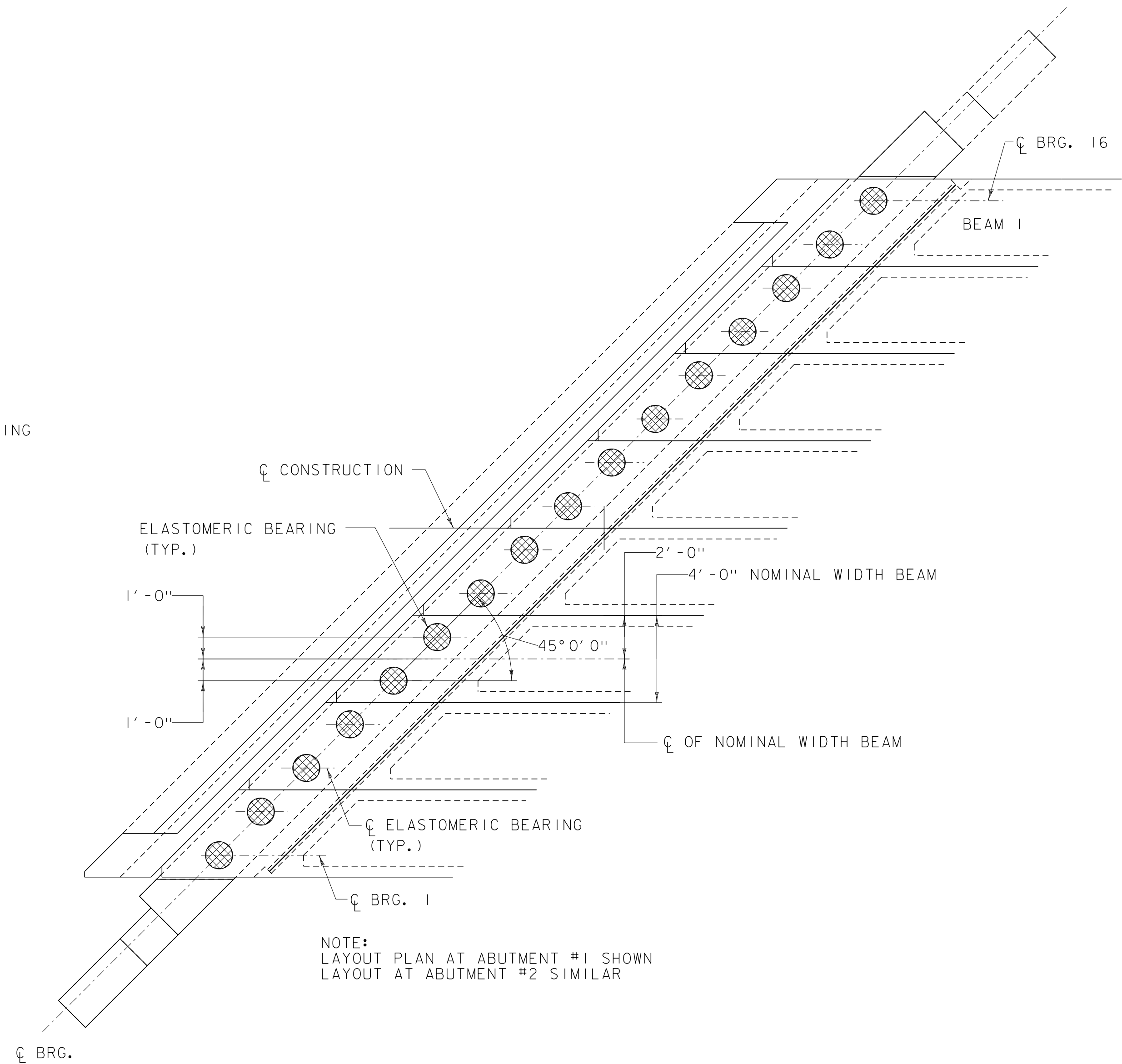
**SIDE ELEVATION**

## ELASTOMERIC BEARING DETAILS

SCALE: 1" = 1'-0"

### BEARING NOTES:

1. BEARINGS SHALL CONFORM TO THE APPLICABLE SUBSECTIONS OF STANDARD SPECIFICATIONS SECTIONS 531 AND 731.
2. ALL REINFORCEMENT BETWEEN LAYERS OF ELASTOMER SHALL BE STEEL MEETING THE REQUIREMENTS OF AASHTO M270/M270 GRADE 36. ALL INTERNAL STEEL PLATES SHALL BE SAND BLASTED AND FREE OF COATINGS, RUST AND MILL SCALE. THE PLATES SHALL BE FREE OF SHARP EDGES AND BURRS.
3. STEEL REINFORCED ELASTOMERIC BEARINGS SHALL HAVE A MINIMUM 1/4" EDGE SEAL OF ELASTOMER INTEGRAL WITH BEARING OVER ALL INTERNAL PLATES.
4. THE ELASTOMER SHALL BE 60 DUROMETER SHORE A.
5. THE ELASTOMER SHALL MEET THE REQUIREMENTS OF LOW TEMPERATURE ZONE D, GRADE 4
6. THE CONCRETE DIRECTLY UNDER THE BEARING DEVICE SHALL BE LEVEL.
7. THE CONTRACTOR IS ADVISED TO HAVE A MINIMUM OF 32 - 1/4" X 16" X 16" GALVANIZED STEEL SHIMS AVAILABLE FOR USE FOR ELEVATION ADJUSTMENTS UPON THE SETTING OF THE SUPERSTRUCTURE UNITS. THE SHIMS SHALL BE FABRICATED ACCORDING TO SECTION 531 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONTRACT ITEM 531.17.
8. ALL BEARINGS WERE DESIGNED PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS 6TH EDITION AND ITS LATEST REVISIONS USING METHOD A.
9. SERVICE DESIGN LOADS FOR BEARINGS:
  - MAXIMUM VERTICAL LOAD = 104.7 KIPS
  - MINIMUM VERTICAL LOAD = 65.1 KIPS
  - MAXIMUM TRANSLATION = 0.60 INCHES
  - MAXIMUM ROTATION = 0.024 RADIAN



**BEARING LAYOUT PLAN**

SCALE: 1/4" = 1'-0"



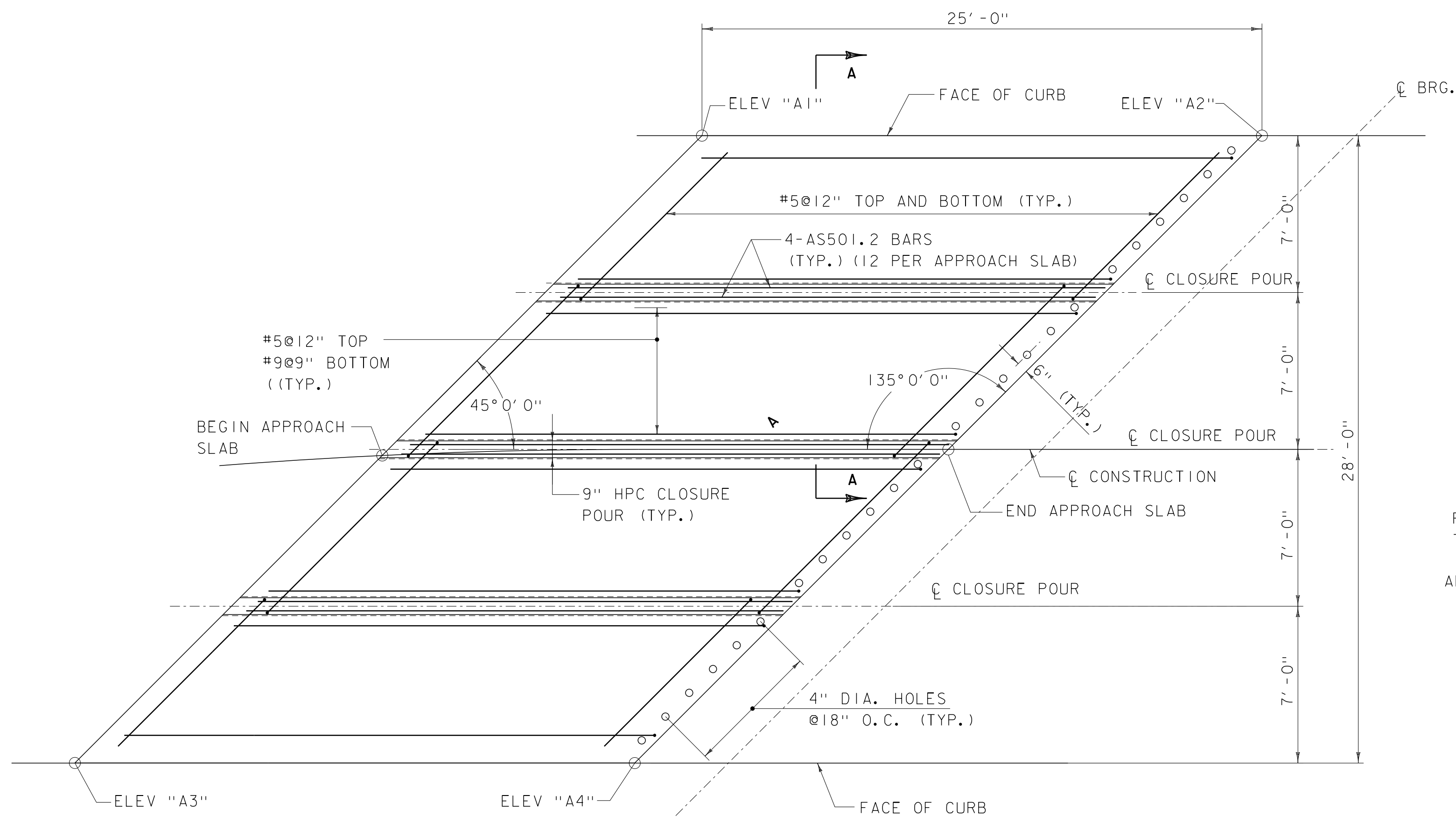
PROJECT NAME: LINCOLN

PROJECT NUMBER: BRF 0188 (8)

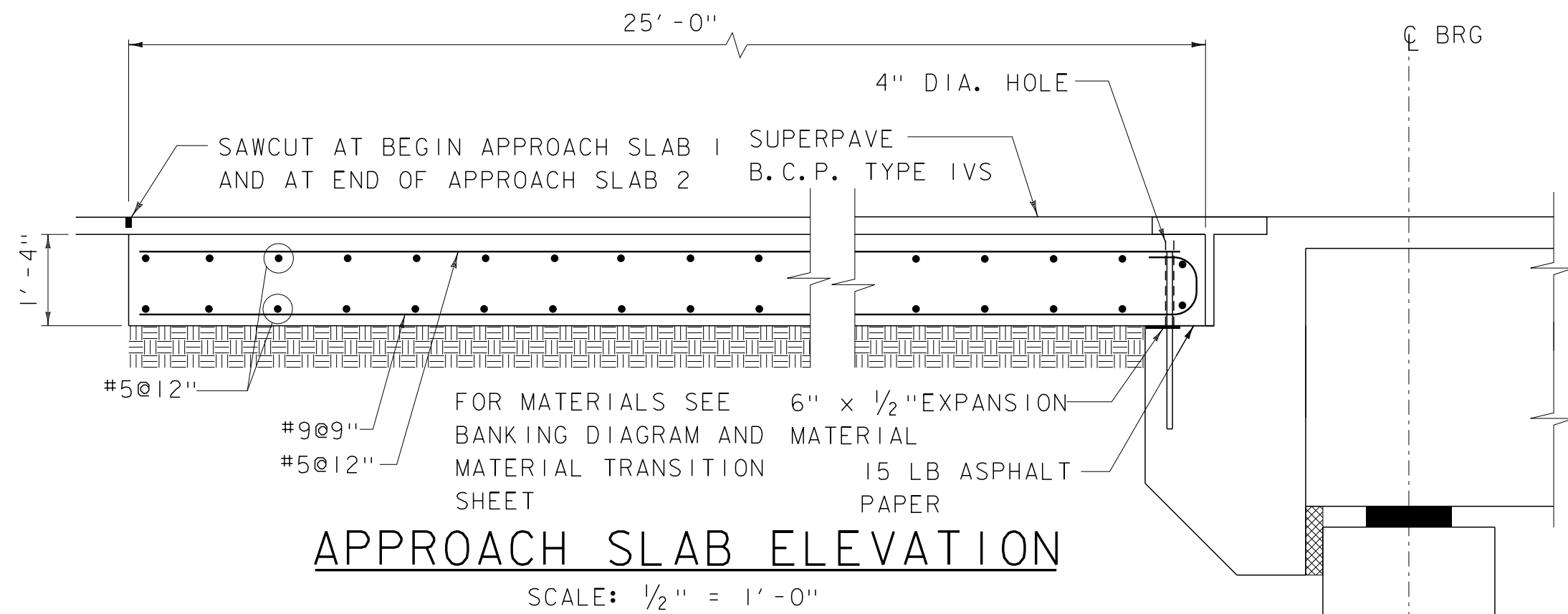
FILE NAME: z10j066details.dgn  
PROJECT LEADER: G.K. DONINGTON  
DESIGNED BY: K JAMES  
ELASTOMERIC BEARING DETAILS

PLOT DATE: 8-DEC-2014  
DRAWN BY: W GERHOLD  
CHECKED BY: A STOCKIN  
SHEET 25 OF 62

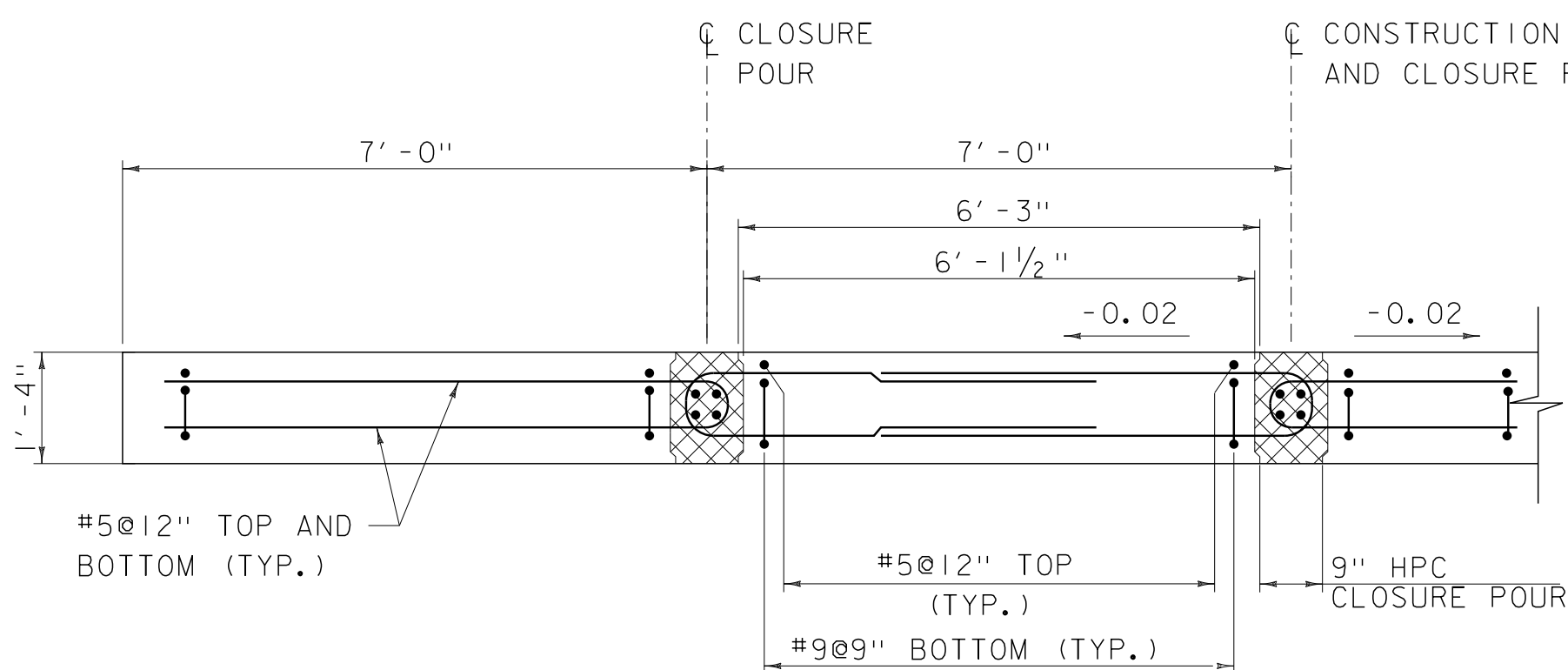




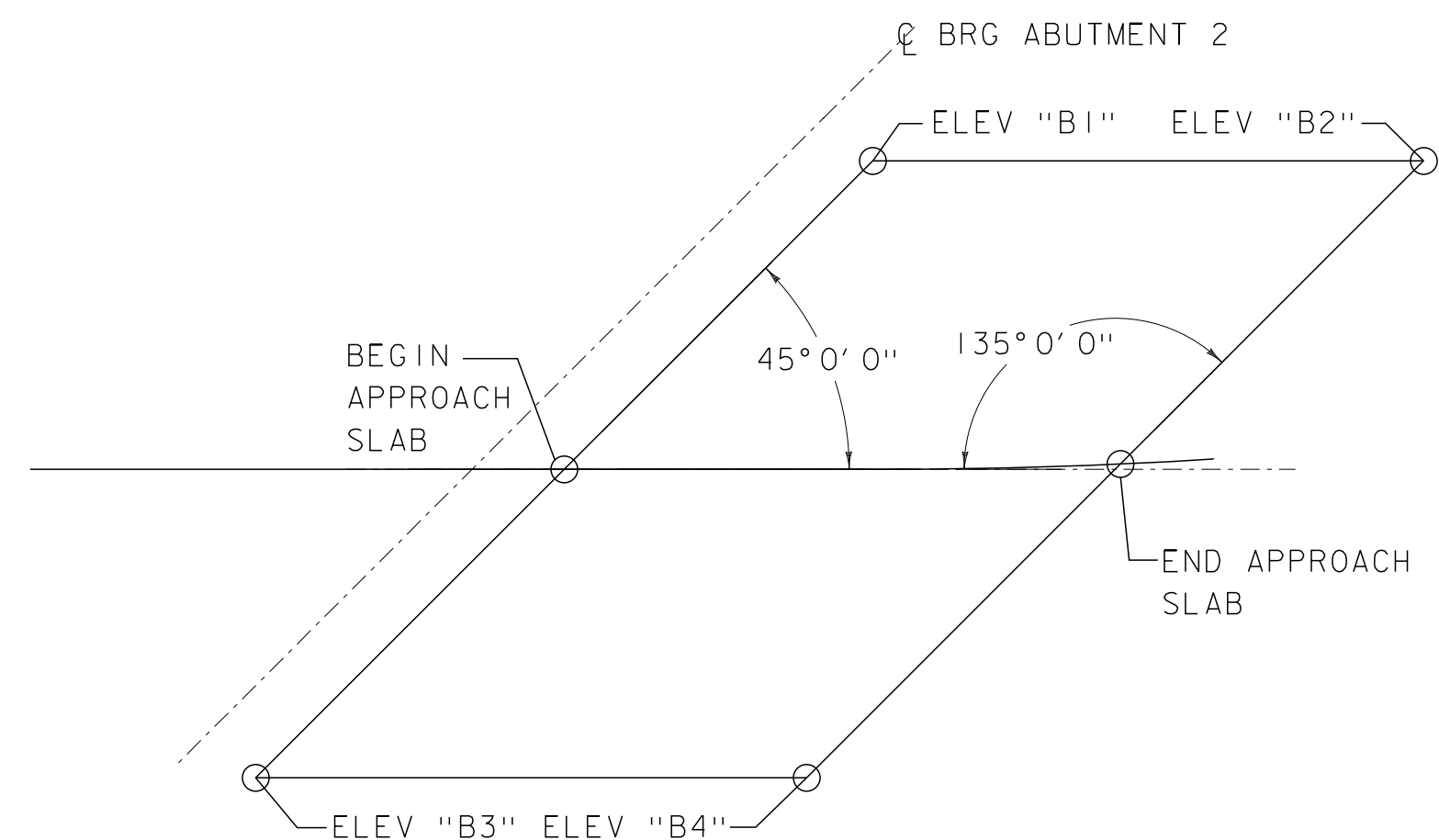
APPROACH SLAB 1 - PLAN  
SCALE: 1/4" = 1'-0"



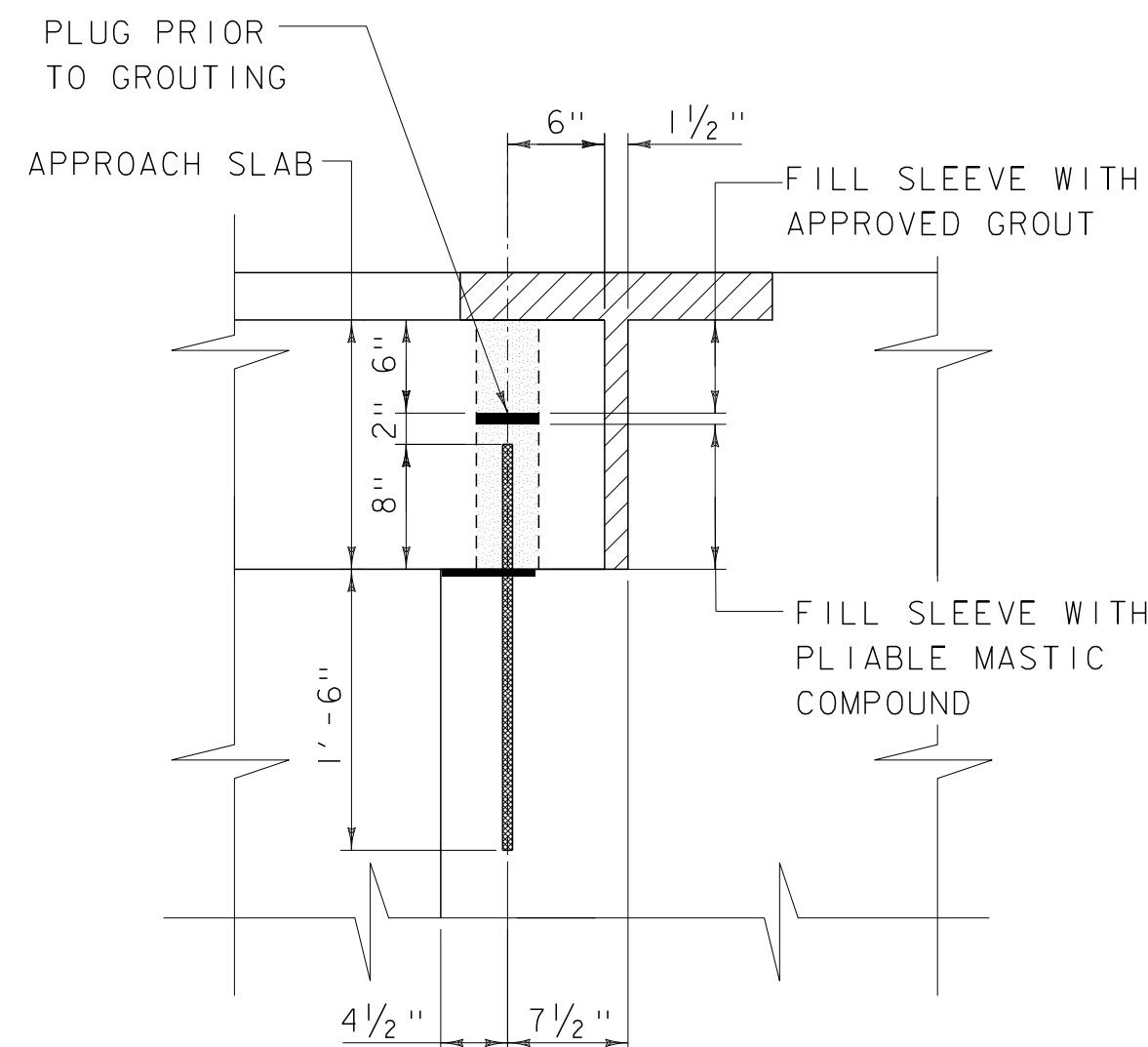
APPROACH SLAB ELEVATION  
SCALE: 1/2" = 1'-0"



SECTION A-A  
SCALE: 1/2" = 1'-0"

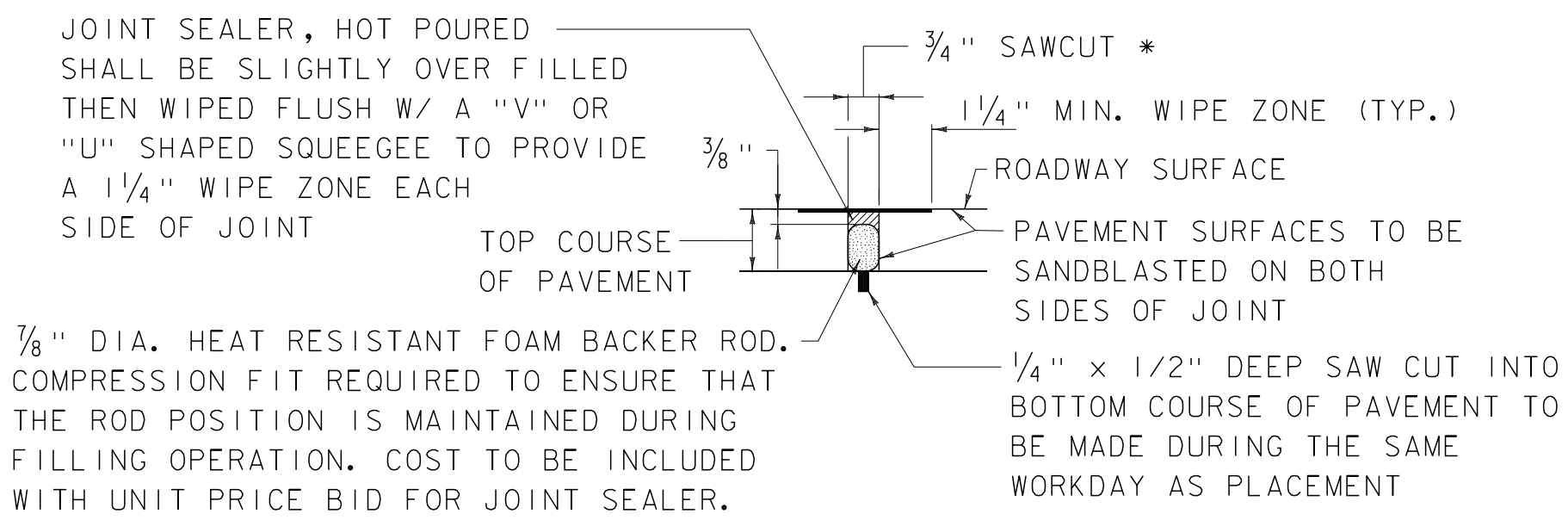


APPROACH SLAB 2 - PLAN  
SCALE: 1/8" = 1'-0"



APPROACH SLAB DOWEL DETAIL  
SCALE: 1" = 1'-0"

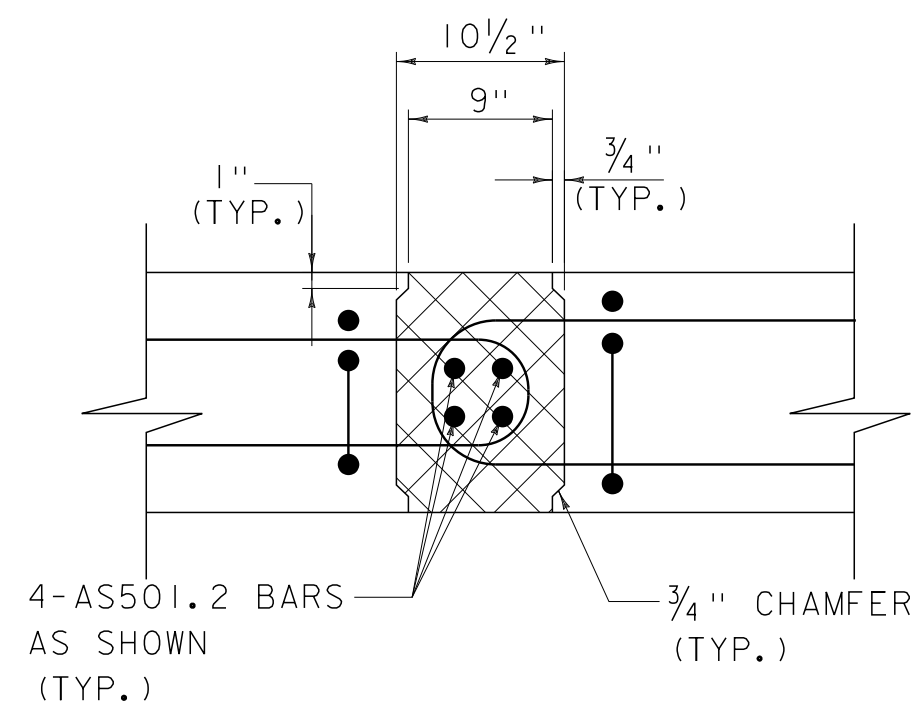
NOTE:  
THE APPROACH SLAB DOWELS SHALL BE CAST INTO THE CURTAIN WALL APPROACH SLAB SEAT. THE BOTTOM LENGTH OF THE SLEEVE WITHIN THE APPROACH SLAB SHALL BE FILLED WITH A PLIABLE MASTIC COMPOUND. THE UPPER PORTION SHALL BE PLUGGED AND THEN FILLED WITH AN APPROVED GROUT. ALL COSTS ASSOCIATED WITH THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 540.10 PRECAST CONCRETE STRUCTURE (APPROACH SLAB #1) OR (APPROACH SLAB #2) AS APPROPRIATE.



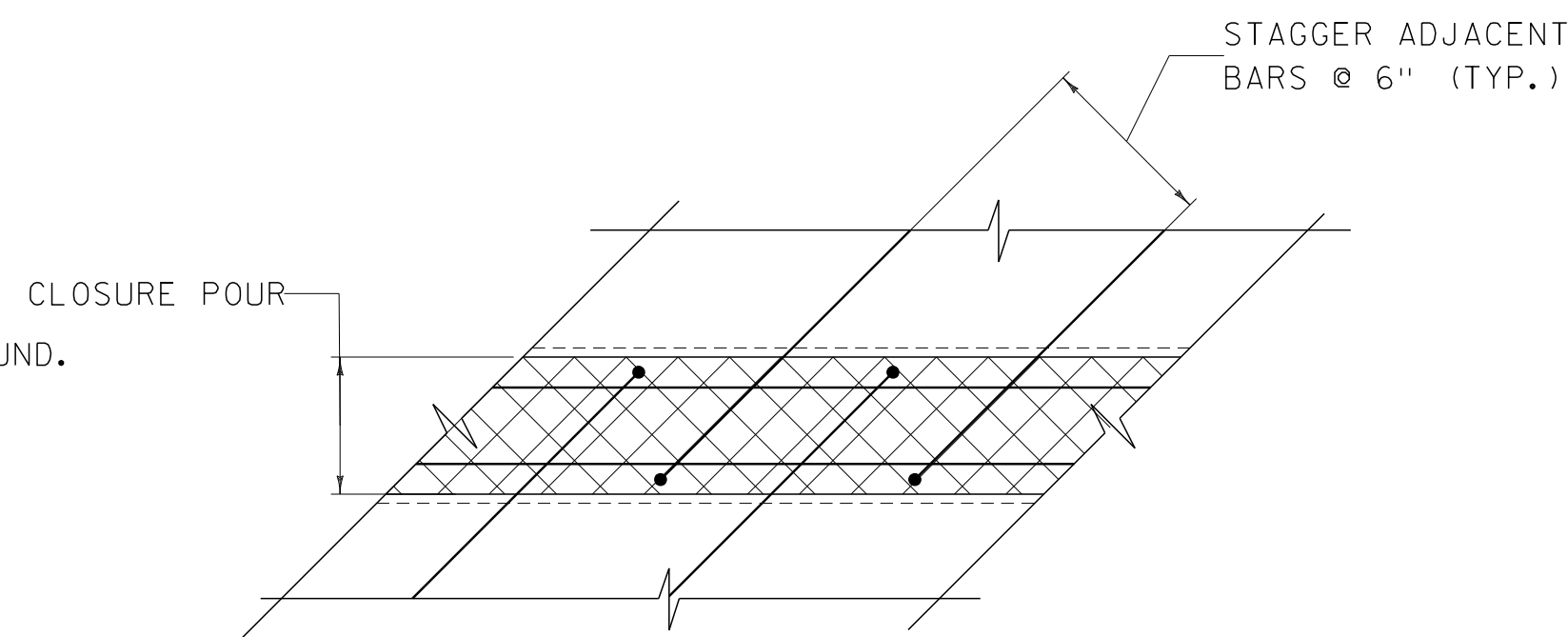
SAWED PAVEMENT JOINT DETAIL  
SCALE: 3" = 1'-0"

* JOINT IS TO BE LOCATED ACCURATELY BY STRING LINING, OR OTHER MEANS, PRIOR TO PAVING, SO THAT THE SAW CUTS WILL BE MADE DIRECTLY OVER THE END OF THE CONCRETE APPROACH SLAB. JOINT SHALL BE CUT DRY IN SINGLE PASS AND BE SEALED WITHIN 24 HOURS OR PRIOR TO EXPOSURE TO TRAFFIC. JOINT SHALL BE CLEANED PRIOR TO APPLYING THE JOINT SEALER.

	STATION	OFFSET	ELEVATION
A1	503+07.17	14.00' LT	998.62
A2	503+32.17	14.00' LT	998.87
BEGIN AS 1	502+92.89	0.00'	998.76
END AS 1	503+18.16	0.00'	999.01
A3	502+77.72	12.60' RT	998.35
A4	503+04.16	14.00' RT	998.59
B1	504+60.53	14.00' LT	1000.15
B2	504+86.95	12.68' LT	1000.44
BEGIN AS 2	504+46.53	0.00'	1000.29
END AS 2	504+71.78	0.00'	1000.54
B3	504+32.53	14.00' RT	999.87
B4	504+57.53	14.00' RT	1000.12



JOINT DETAIL SECTION  
SCALE: 1" = 1'-0"



JOINT DETAIL PLAN  
SCALE: 1" = 1'-0"

LEGEND

SPECIAL PROVISION (HIGH PERFORMANCE CONCRETE, (RAPID SET) (FPO)



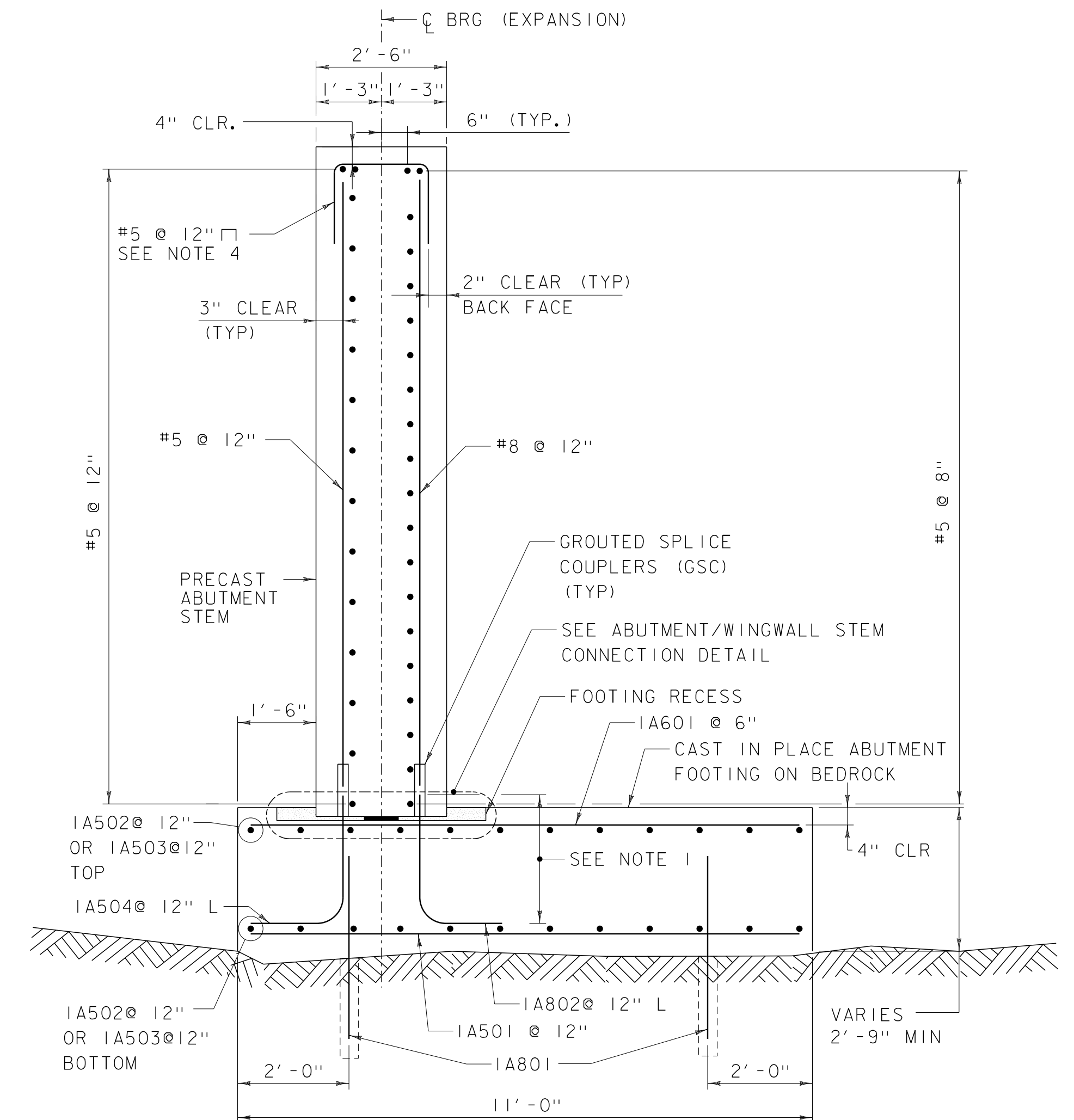
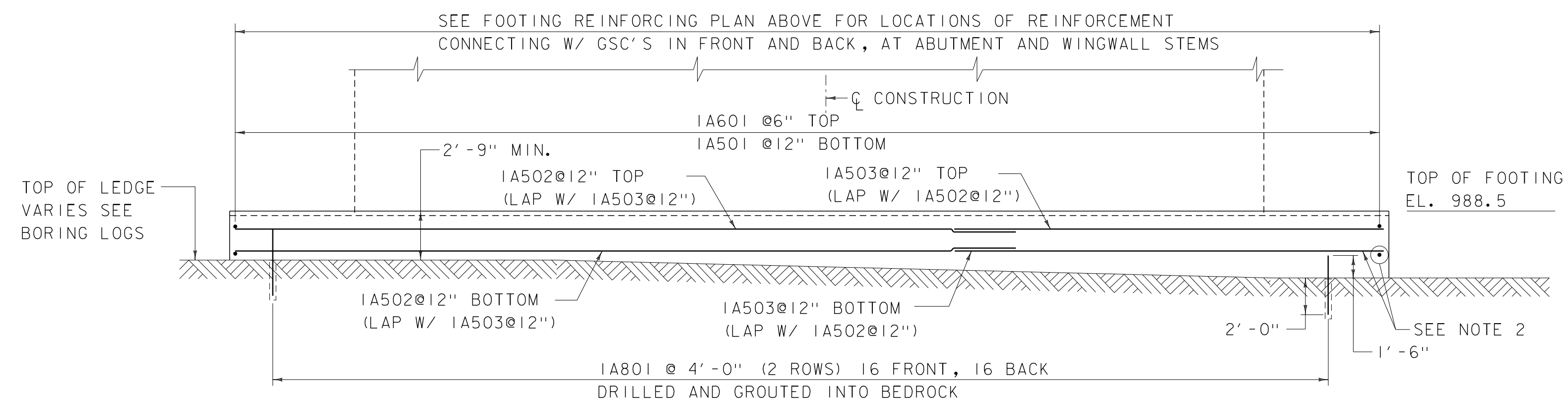
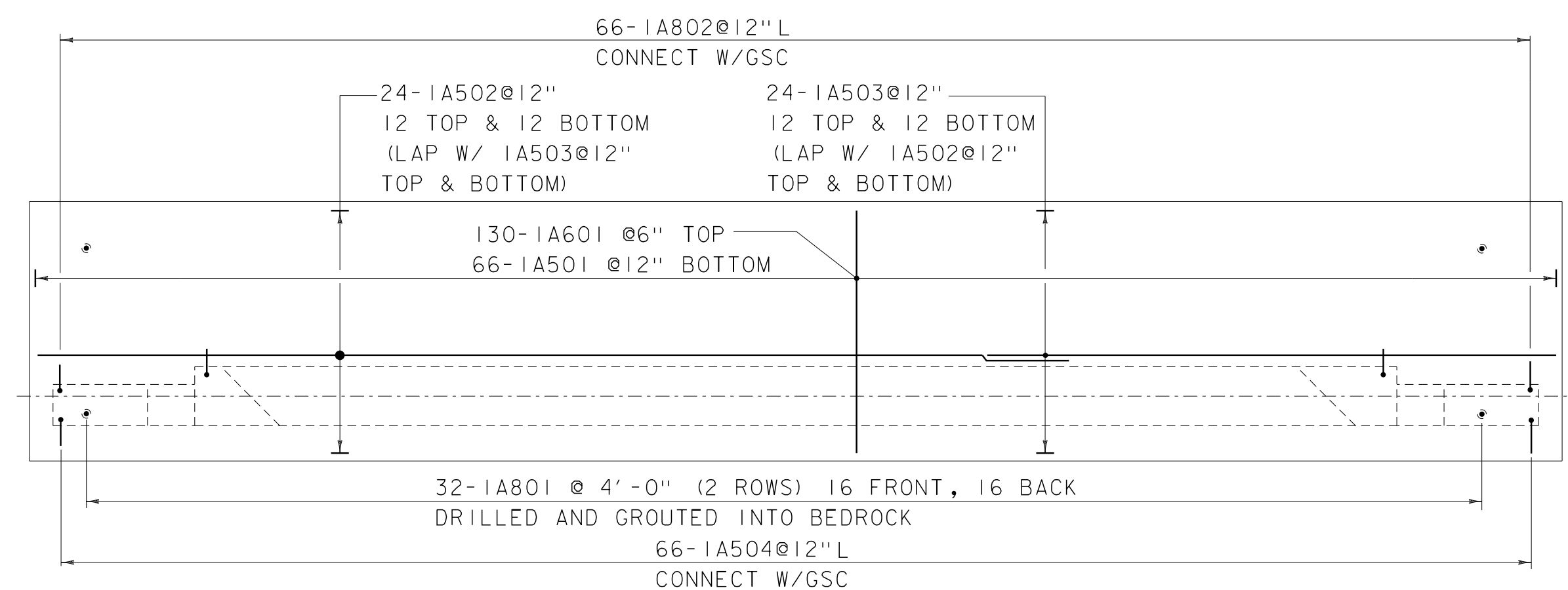
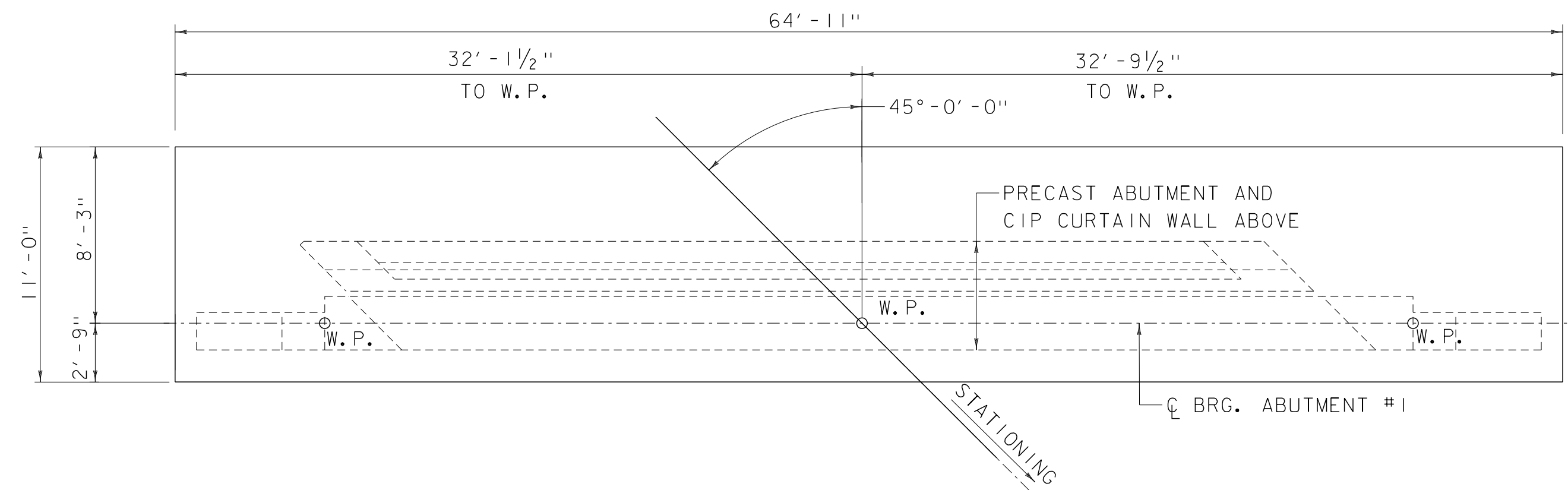
PARSONS BRINCKERHOFF  
650 ELM STREET  
MANCHESTER, NH 03101

PROJECT NAME: LINCOLN

PROJECT NUMBER: BRF 0188 (8)

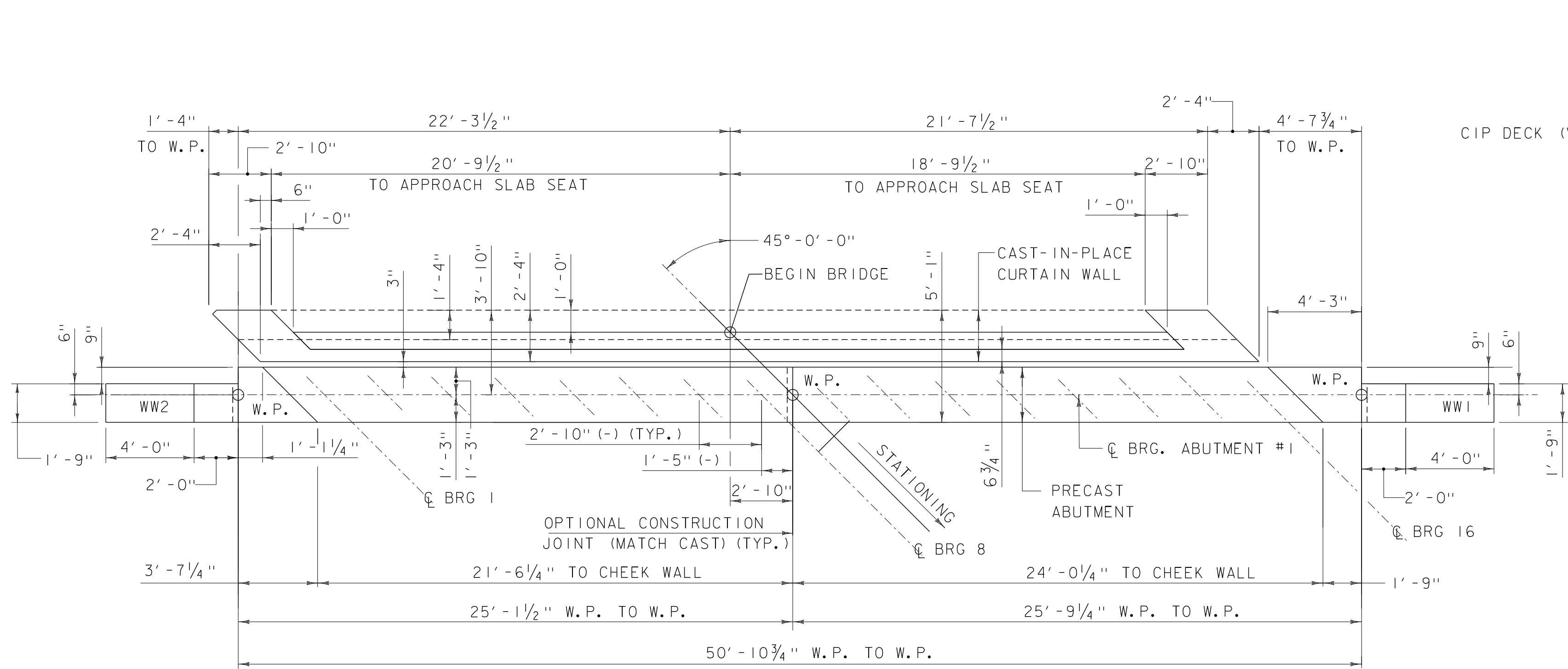
FILE NAME: z10j066apps1ab.dgn  
PROJECT LEADER: G.K. DONINGTON  
DESIGNED BY: K JAMES  
APPROACH SLAB DETAILS

PLOT DATE: 8-DEC-2014  
DRAWN BY: W GERHOLD  
CHECKED BY: R GAUDREAU  
SHEET 26 OF 62

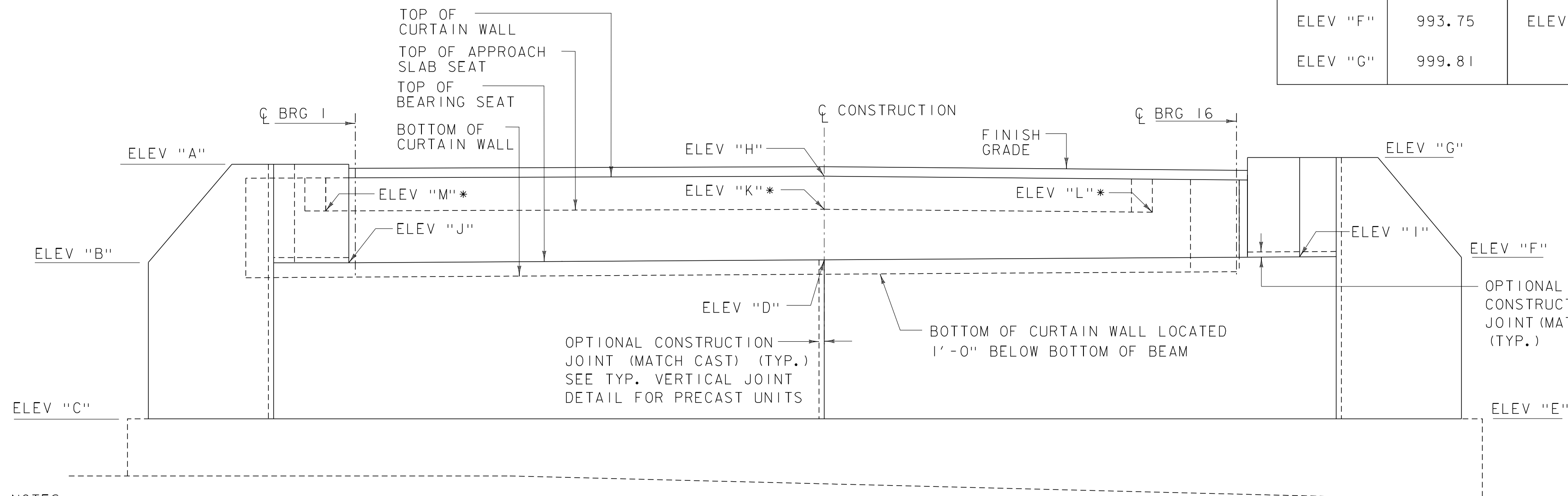


NOTES:

1. LEG LENGTH SHALL MEET THE REQUIREMENTS OF THE GROUTED SPLICE COUPLERS. DIMENSION IN REBAR SCHEDULE FOR ESTIMATING PURPOSES ONLY.
2. BOTTOM LAYER OF ABUTMENT FOOTING REINFORCEMENT SHALL BE PLACED BASED ON THEORETICAL 2'-9" THICKNESS.
3. THE TOP OF THE FOOTING ELEVATION FOR ABUTMENT 1 WAS SET BASED ON THE BEDROCK ELEVATIONS DETERMINED FROM BORINGS B-105 AND B-106. ACTUAL BEDROCK ELEVATIONS WILL VARY.
4. REINFORCEMENT IN TOP OF ABUTMENT SHALL BE CENTERED ABOUT THE ANCHOR RODS SO THAT NO REINFORCEMENT IS DAMAGED DURING CORING OF THE ANCHOR ROD HOLES.
5. MINIMUM SPLICE LENGTH FOR HORIZONTAL #5 BARS SHALL BE 3'-9" FOR EPOXY COATED BARS AND 3'-1" FOR BLACK BARS.



ABUTMENT #1 PLAN (PCU 1)  
SCALE: 1/4" = 1'-0"

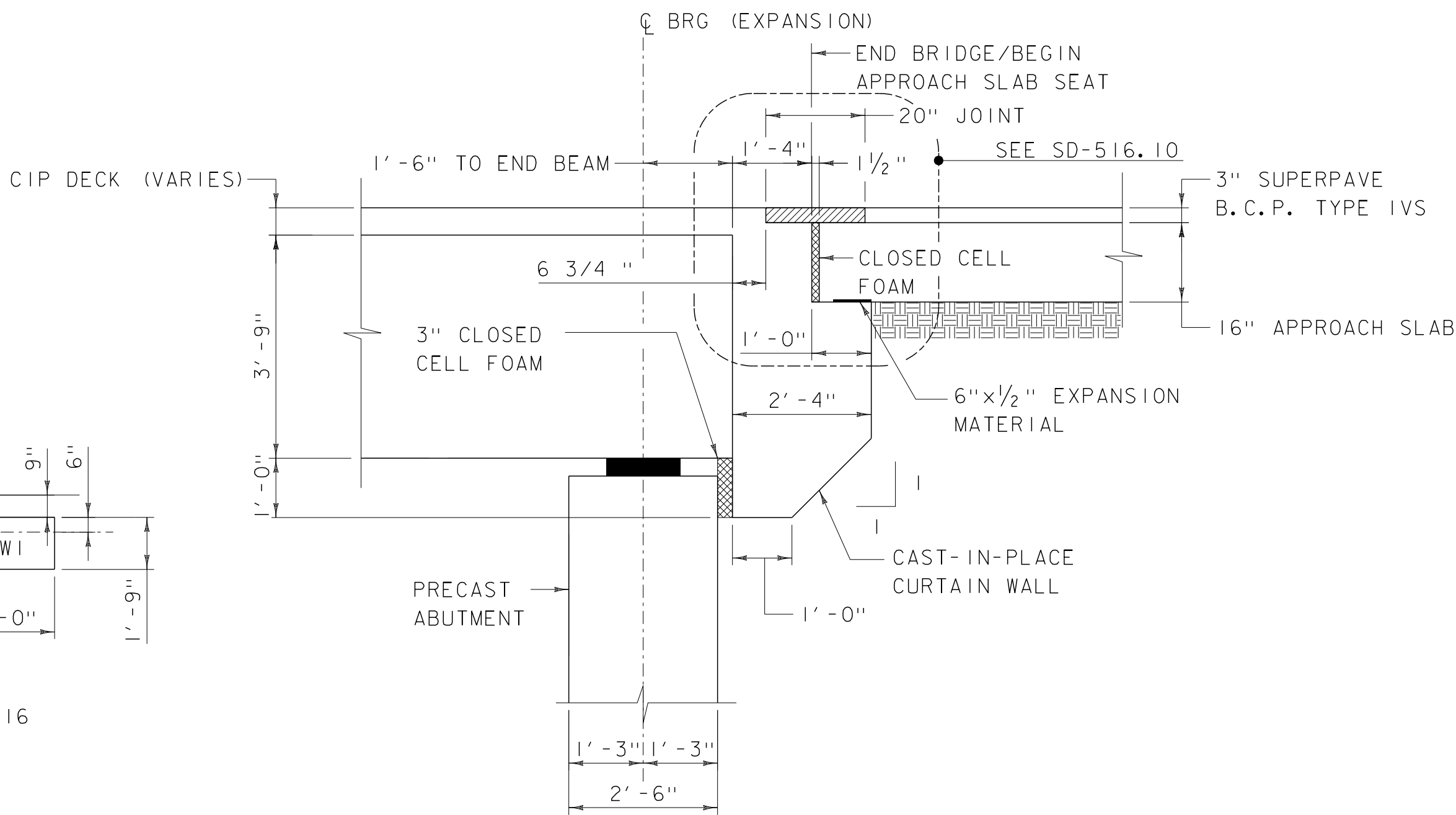


NOTES:  
1) LEVEL TOP OF BEARING SEAT LOCALLY AT BEARING PAD LOCATIONS. SEE BEARING SEAT ELEVATION TABLE  
2) ELEVATIONS TAKEN AT C BEARINGS WITH EXCEPTION OF:  
*APPROACH SLAB SEAT ELEVATIONS TAKEN AT C OF BRACKET.  
ELEVATION "H" TAKEN AT BEGIN BRIDGE STATION.

ABUTMENT #1 ELEVATION (PCU 1)  
SCALE: 1/4" = 1'-0"

BEARING SEAT ELEVATION TABLE

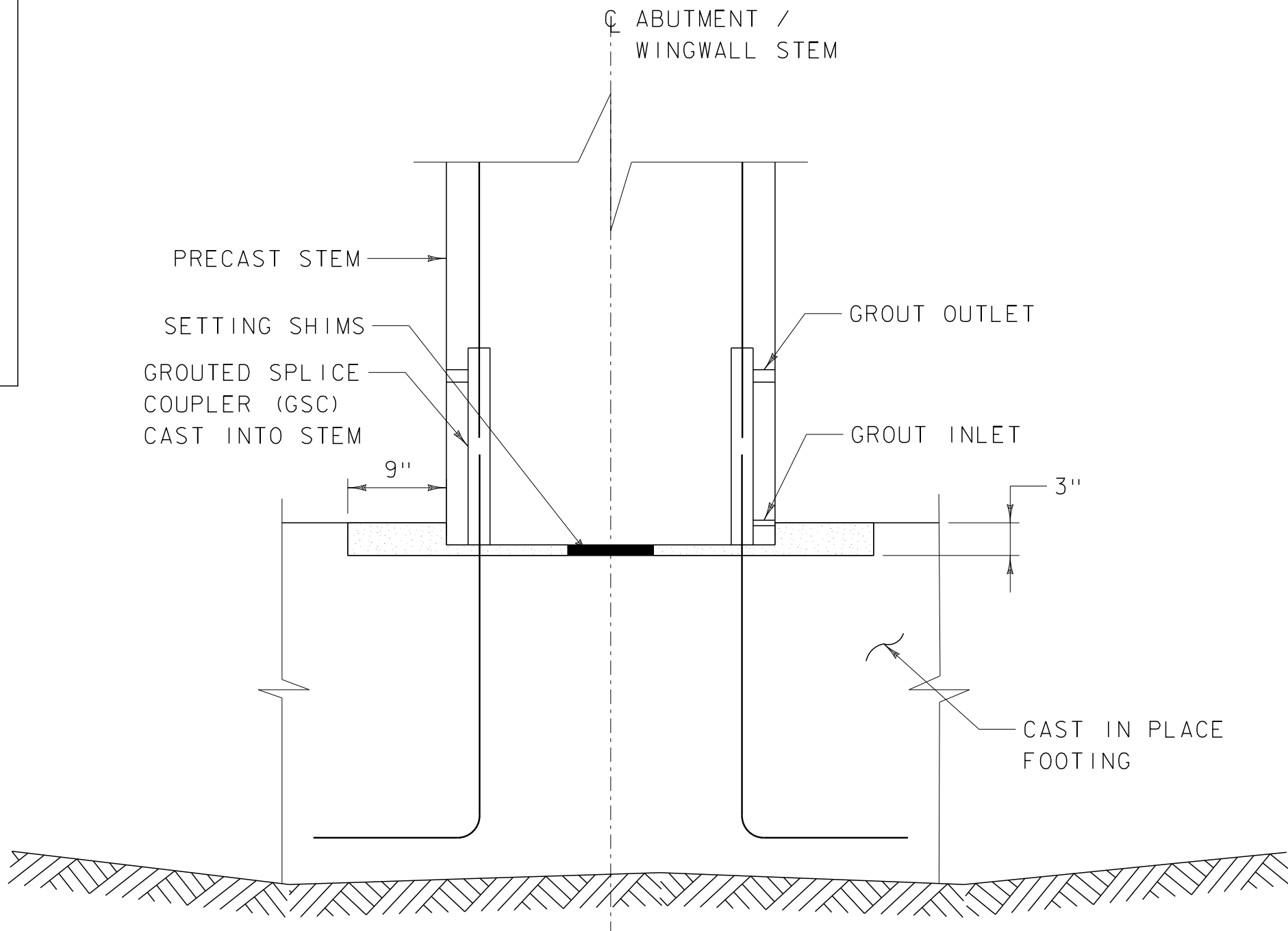
Bearing	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Elevation	994.29	994.31	994.33	994.35	994.37	994.39	994.41	994.43	994.45	994.47	994.49	994.51	994.53	994.55	994.57	994.59



TYPICAL END DETAIL  
SCALE: 1/2" = 1'-0"

ELEVATIONS  
SEE NOTE 2

ELEV "A"	999.45	ELEV "H"	999.01
ELEV "B"	994.25	ELEV "I"	994.60
ELEV "C"	988.50	ELEV "J"	994.28
ELEV "D"	994.44	ELEV "K"	997.67
ELEV "E"	988.50	ELEV "L"	997.53
ELEV "F"	993.75	ELEV "M"	997.25
ELEV "G"	999.81		



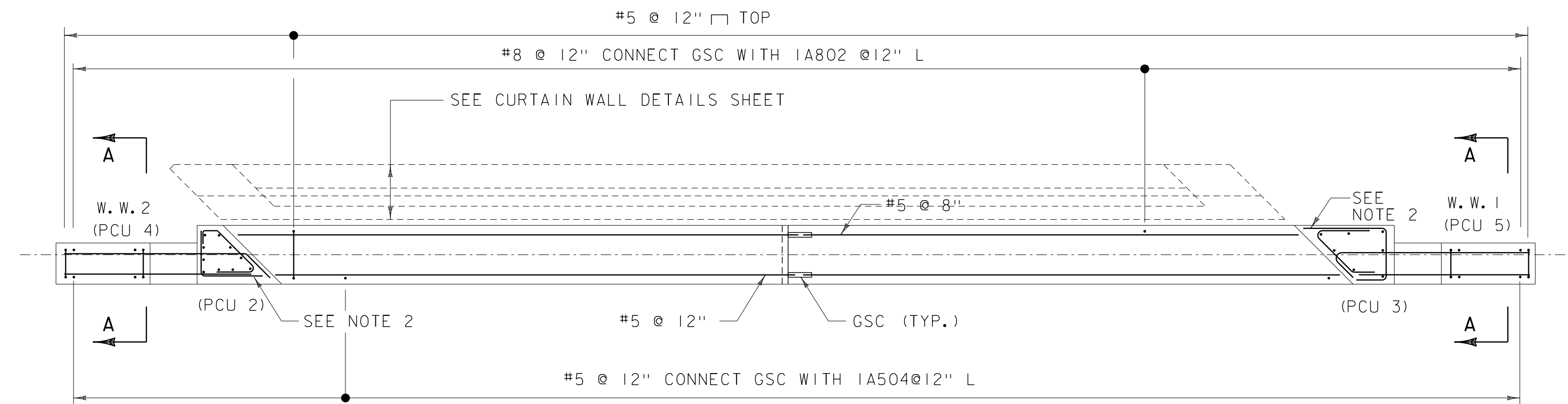
ABUTMENT/WINGWALL STEM  
CONNECTION DETAIL  
SCALE: 1" = 1'-0"



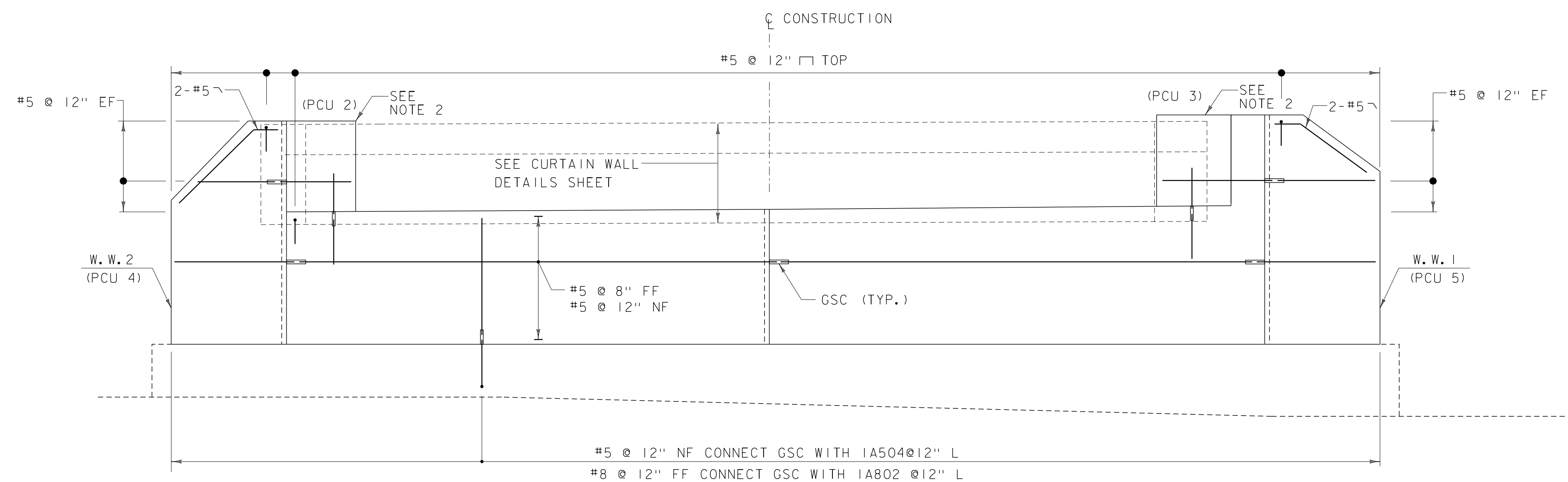
PROJECT NAME: LINCOLN  
PROJECT NUMBER: BRF 0188 (8)

FILE NAME: z10j066sub4.dgn  
PROJECT LEADER: K DONINGTON  
DESIGNED BY: K JAMES  
ABUTMENT 1 PLAN  
PLOT DATE: 8-DEC-2014  
DRAWN BY: W GERHOLD  
CHECKED BY: R GAUDREAU  
SHEET 28 OF 62

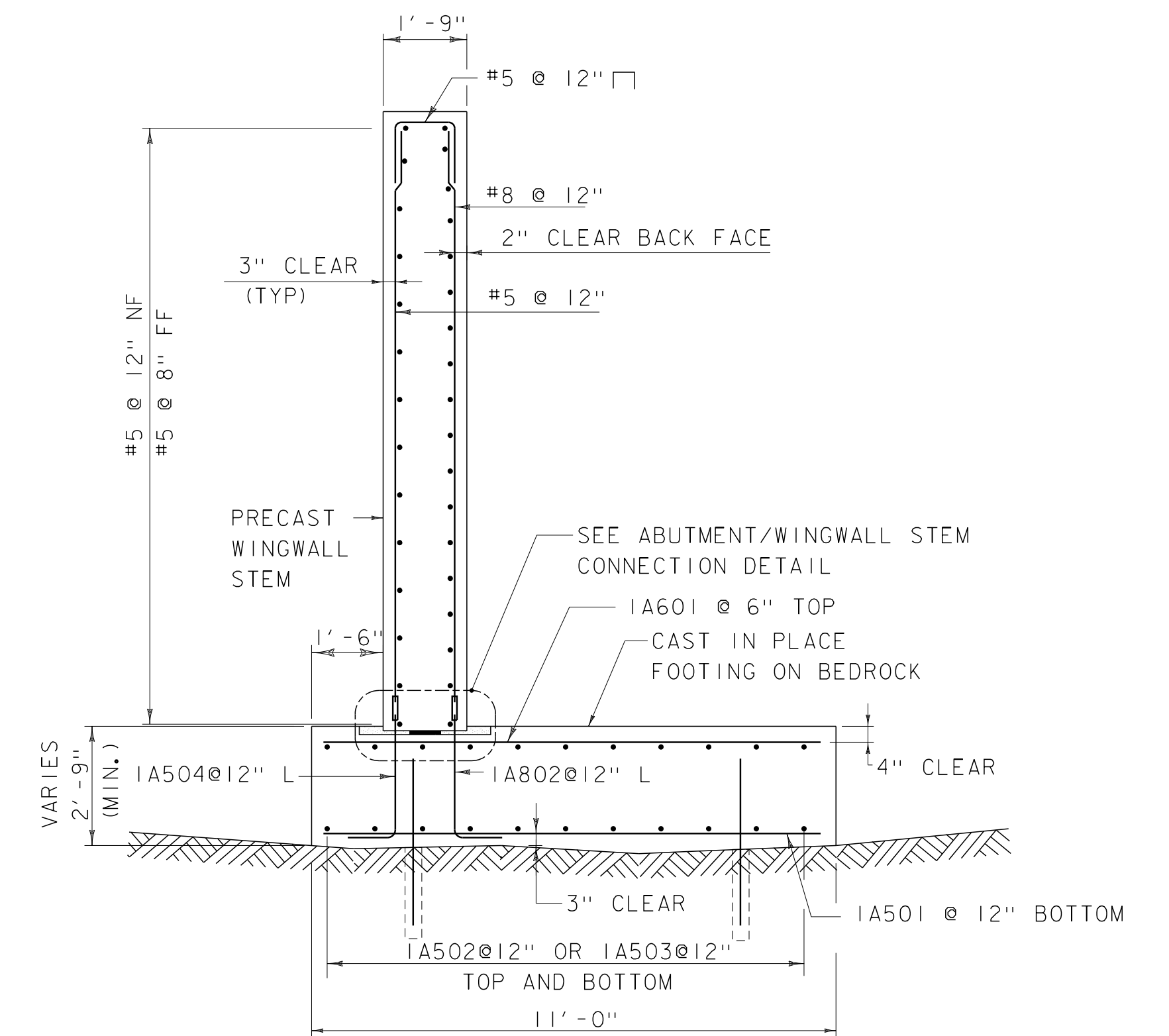




**ABUTMENT #1 REINFORCING PLAN (PCU 1)**  
SCALE: 1/4" = 1'-0"

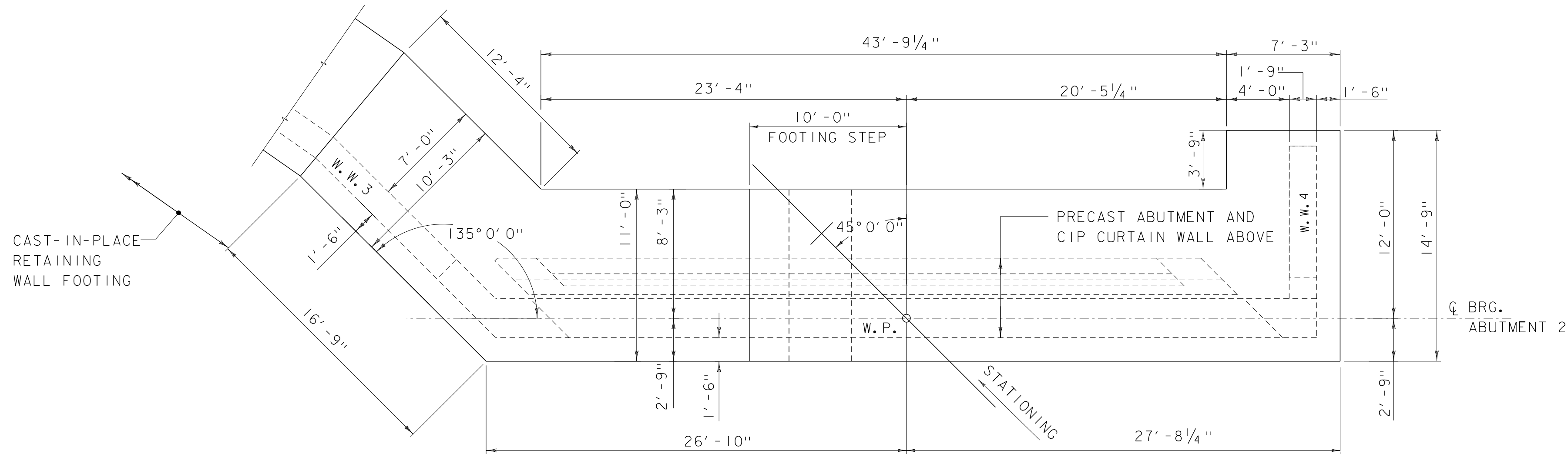


**ABUTMENT #1 REINFORCING ELEVATION (PCU 1)**  
SCALE: 1/4" = 1'-0"



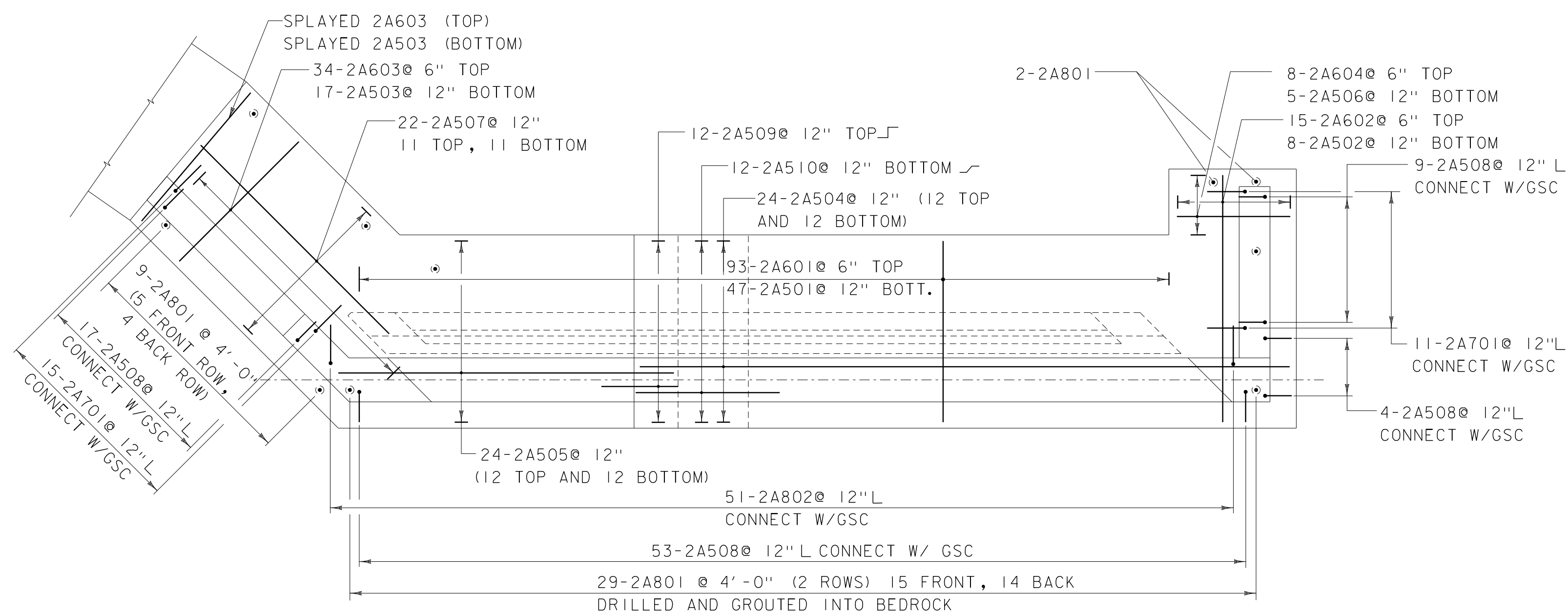
**SECTION A-A (W.W. 1 AND W.W. 2 SECTION)**  
SCALE: 3/8" = 1'-0"

- NOTES:
1. NF = NEAR FACE  
FF = FAR FACE  
EF = EACH FACE  
GSC = GROUTED SPLICE COUPLER
  2. CHEEKWALLS SHALL HAVE A #5@12" (MAX SPACING)  
REINFORCING GRID FOR ALL EXPOSED CONCRETE SURFACES.



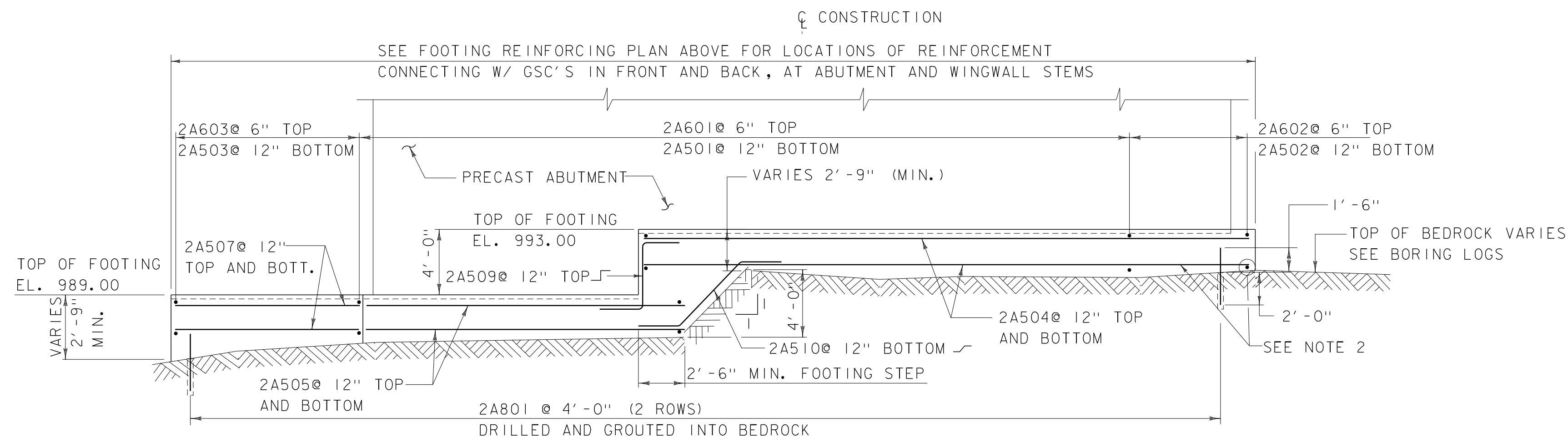
**ABUTMENT #2 PLAN CAST-IN-PLACE FOOTING MASONRY**

SCALE:  $\frac{3}{16}" = 1' - 0"$



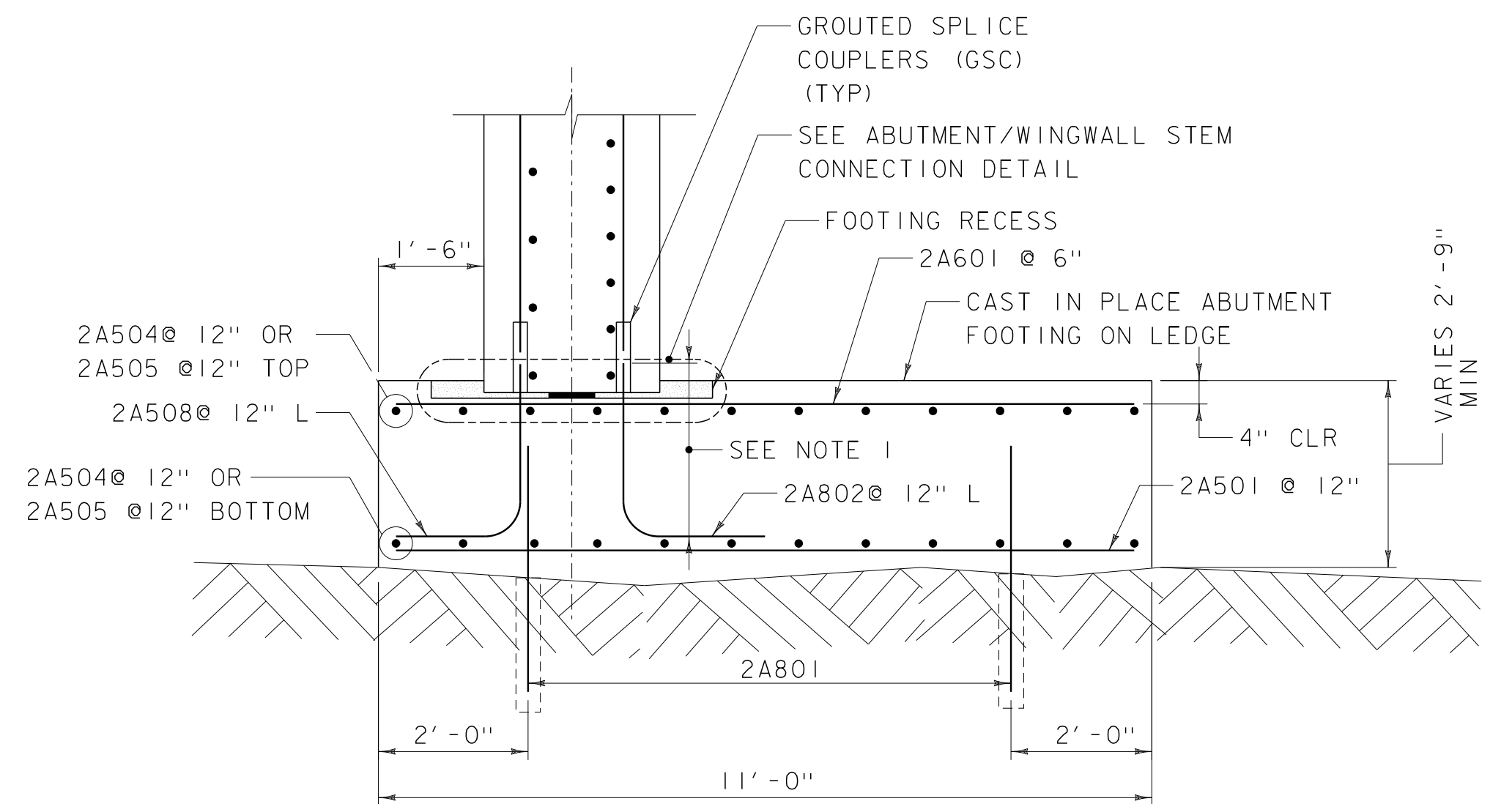
**ABUTMENT #2 PLAN CAST-IN-PLACE FOOTING REINFORCING**

SCALE:  $\frac{3}{16}" = 1' - 0"$



**ABUTMENT #2 CAST-IN-PLACE FOOTING ELEVATION**

SCALE:  $\frac{3}{16}" = 1' - 0"$



**ABUTMENT #2 FOOTING SECTION**

SCALE:  $\frac{1}{2}" = 1' - 0"$

**NOTES:**

1. LEG LENGTH SHALL MEET THE REQUIREMENTS OF THE GROUTED SPLICE COUPLERS. DIMENSION IN REBAR SCHEDULE IS FOR ESTIMATING PURPOSES ONLY.
2. BOTTOM LAYER OF ABUTMENT FOOTING REINFORCEMENT SHALL BE PLACED BASED ON THEORETICAL 2'-9" THICKNESS.
3. THE TOP OF THE FOOTING ELEVATIONS FOR ABUTMENT 2 WERE SET BASED ON THE BEDROCK ELEVATIONS DETERMINED FROM BORINGS B-103 AND B-104. ACTUAL BEDROCK ELEVATIONS WILL VARY.
4. REINFORCEMENT IN TOP OF ABUTMENT SHALL BE CENTERED ABOUT THE ANCHOR RODS SO THAT NO REINFORCEMENT IS DAMAGED DURING CORING OF THE ANCHOR ROD HOLES.
5. MINIMUM SPLICE LENGTH FOR HORIZONTAL #5 BARS SHALL BE 3'-9" FOR EPOXY COATED BARS AND 3'-1" FOR BLACK BARS.



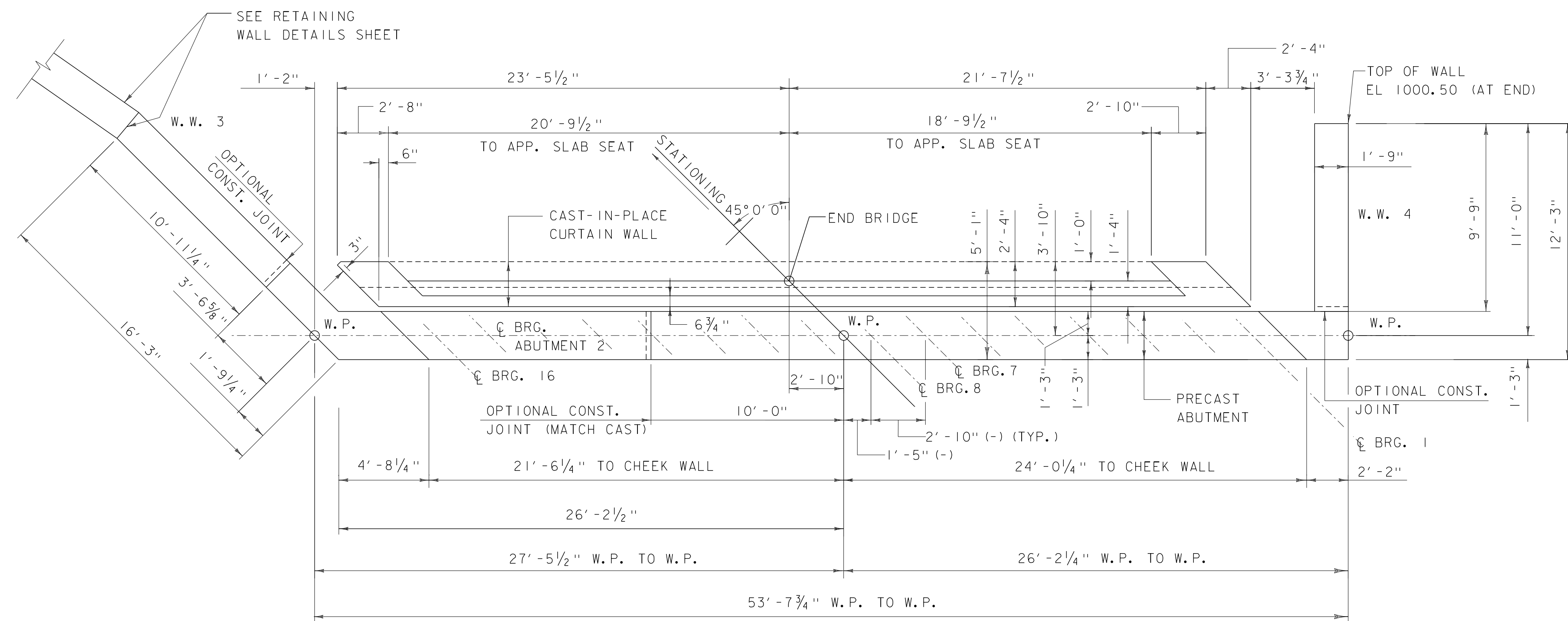
**PARSONS BRINCKERHOFF**  
650 ELM STREET  
MANCHESTER, NH 03101

PROJECT NAME: LINCOLN

PROJECT NUMBER: BRF 0188 (8)

FILE NAME: z10j066sub2.dgn  
PROJECT LEADER: G.K.DONINGTON  
DESIGNED BY: K. JAMES  
ABUTMENT 2 FOOTING PLAN

PLOT DATE: 8-DEC-2014  
DRAWN BY: W GERHOLD  
CHECKED BY: R GAUDREAU  
SHEET 30 OF 62



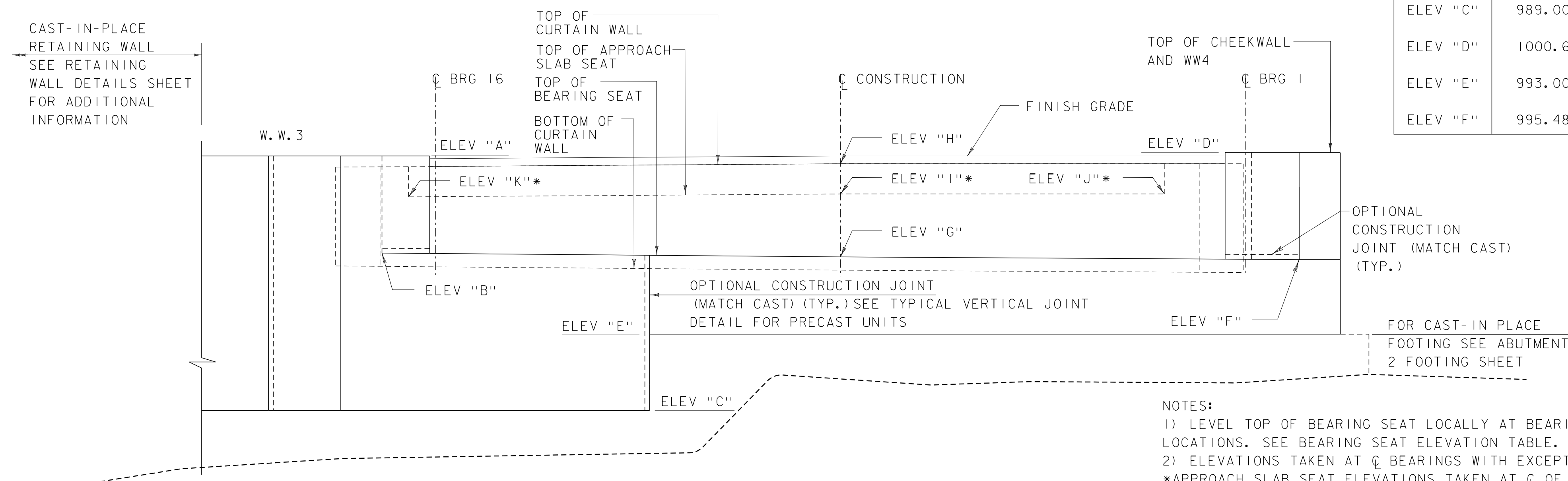
ABUTMENT #2 PLAN (PCU 6)

SCALE: 1/4" = 1'-0"

## ELEVATIONS

SEE NOTE 2

ELEV "A"	1000.98	ELEV "G"	995.64
ELEV "B"	995.80	ELEV "H"	1000.29
ELEV "C"	989.00	ELEV "I"	998.96
ELEV "D"	1000.66	ELEV "J"	998.54
ELEV "E"	993.00	ELEV "K"	998.82
ELEV "F"	995.48		

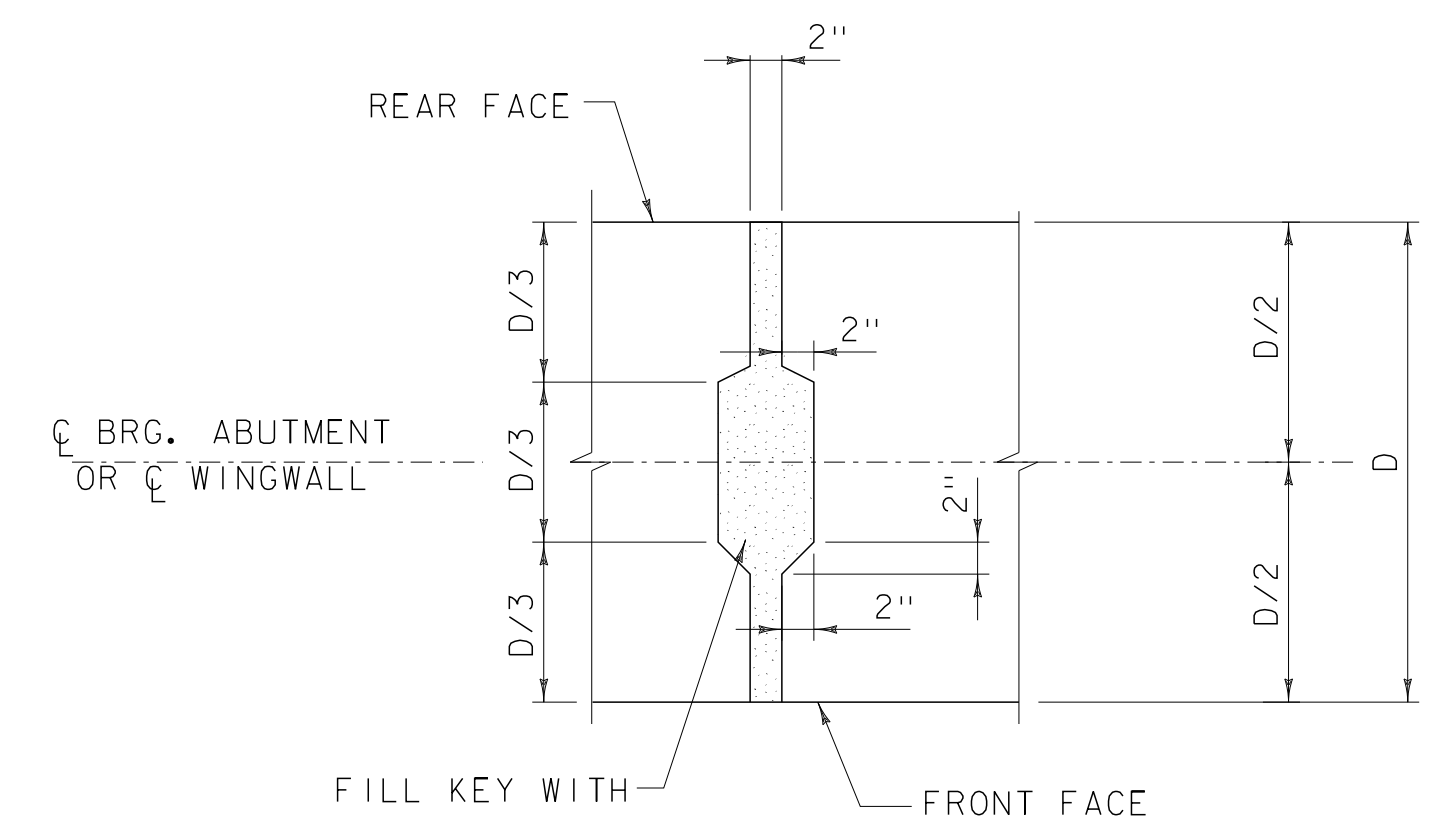


ABUTMENT #2 ELEVATION (PCU 6)

SCALE: 1/4" = 1'-0"

### NOTES:

- 1) LEVEL TOP OF BEARING SEAT LOCALLY AT BEARING PAD LOCATIONS. SEE BEARING SEAT ELEVATION TABLE.
- 2) ELEVATIONS TAKEN AT CL BEARINGS WITH EXCEPTION OF: *APPROACH SLAB SEAT ELEVATIONS TAKEN AT CL OF BRACKET. ELEVATION "H" TAKEN AT END BRIDGE STATION.



## TYPICAL VERTICAL JOINT DETAIL

## FOR PRECAST UNITS

SCALE: 1" = 1'-0"

## BEARING SEAT ELEVATION TABLE

Bearing	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Elevation	995.49	995.51	995.53	995.55	995.57	995.59	995.61	995.63	995.65	995.67	995.69	995.71	995.73	995.75	995.77	995.79



PARSONS BRINCKERHOFF  
650 ELM STREET  
MANCHESTER, NH 03101

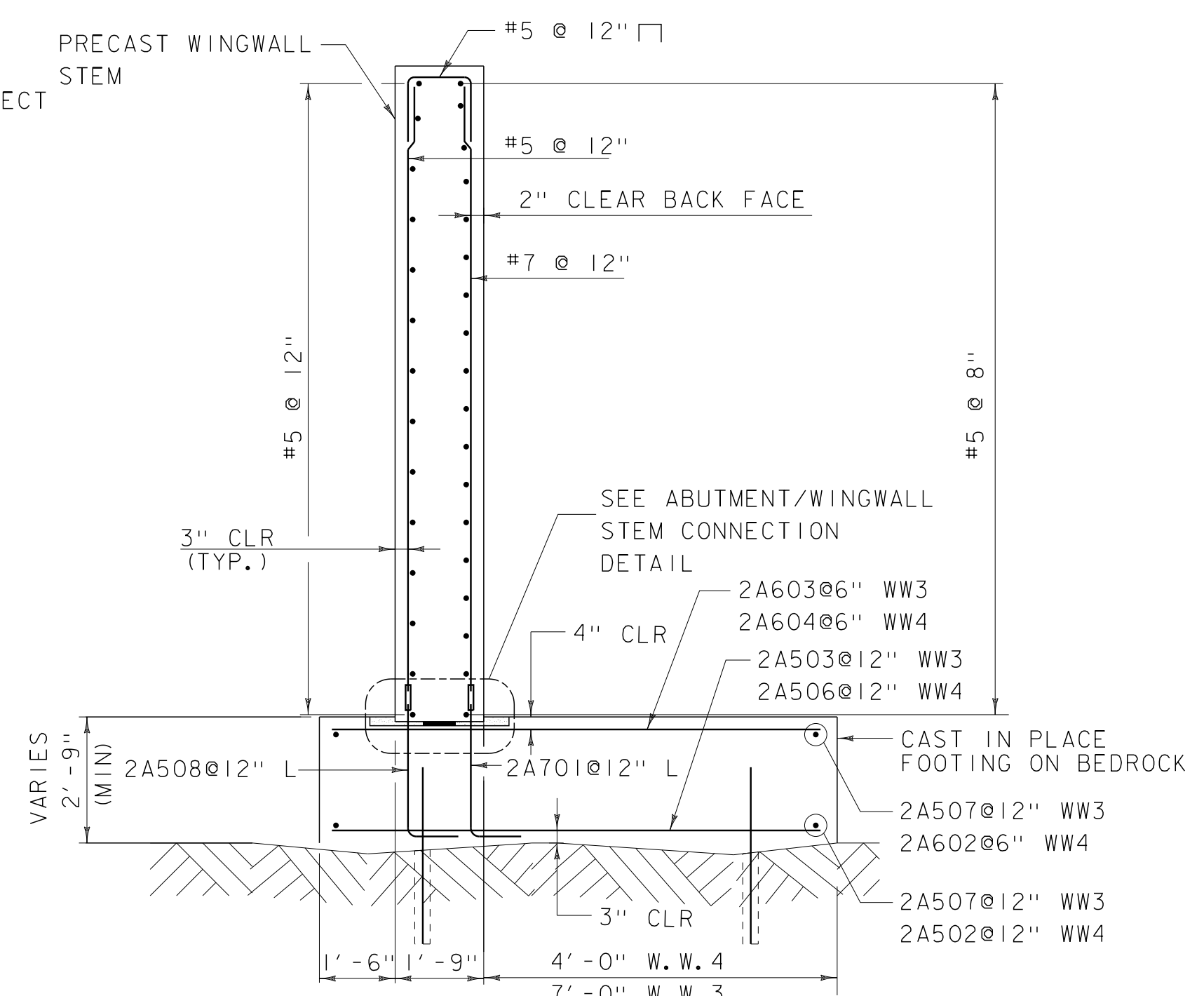
PROJECT NAME: LINCOLN

PROJECT NUMBER: BRF 0188 (8)

FILE NAME: z10j066sub2.dgn  
PROJECT LEADER: G.K.DONINGTON  
DESIGNED BY: K. JAMES  
ABUTMENT 2 PLAN

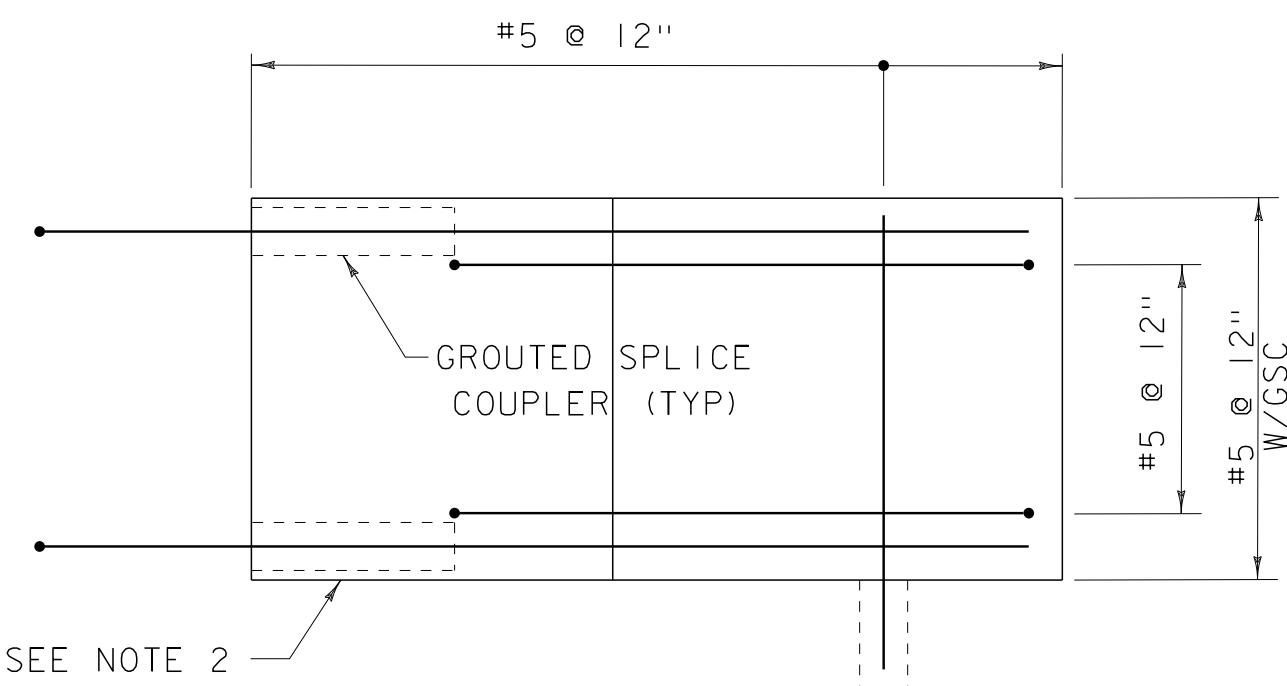
PLOT DATE: 8-DEC-2014  
DRAWN BY: W GERHOLD  
CHECKED BY: R GAUDREAU  
SHEET 31 OF 62





SECTION A-A (W.W.3 AND W.W.4 SECTION)

SCALE:  $\frac{3}{8}" = 1' - 0"$



SCALE:  $\frac{1}{2}" = 1' - 0"$

SCALE: 1/2" = 1'-0"

SEE NOTE 2

5 @ 12"

5 @ 12"

#5 @ 12"

GRouted SPLICE COUPLER (TYP)

GRouted SPLICE COUPLER

ELEVATION PCU 8

SCALE:  $\frac{1}{2}'' = 1' - 0''$



ELEVATION PCU 8

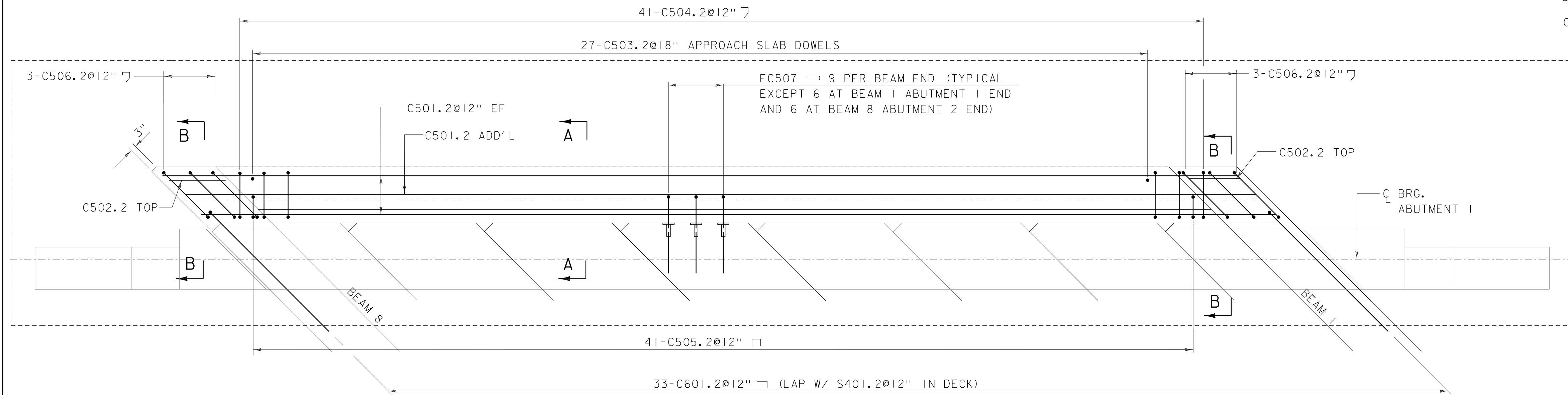
SCALE: 1/4" = 1' - 0'

- 
- PARSONS BRINCKERHOFF**  
650 ELM STREET  
MANCHESTER, NH 03101

PROJECT NUMBER: BRF 0188 (8)

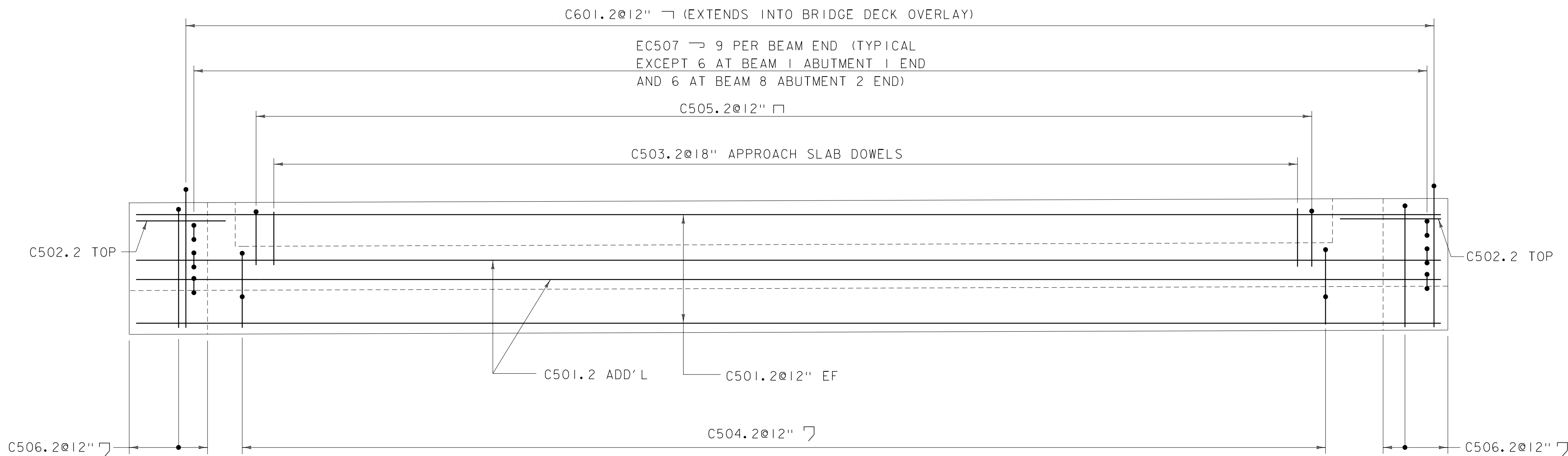
PLOT DATE: 8-DEC-2014  
DRAWN BY: W GERHOLD  
CHECKED BY: R GAUDREAL  
SHEET 32 OF 62



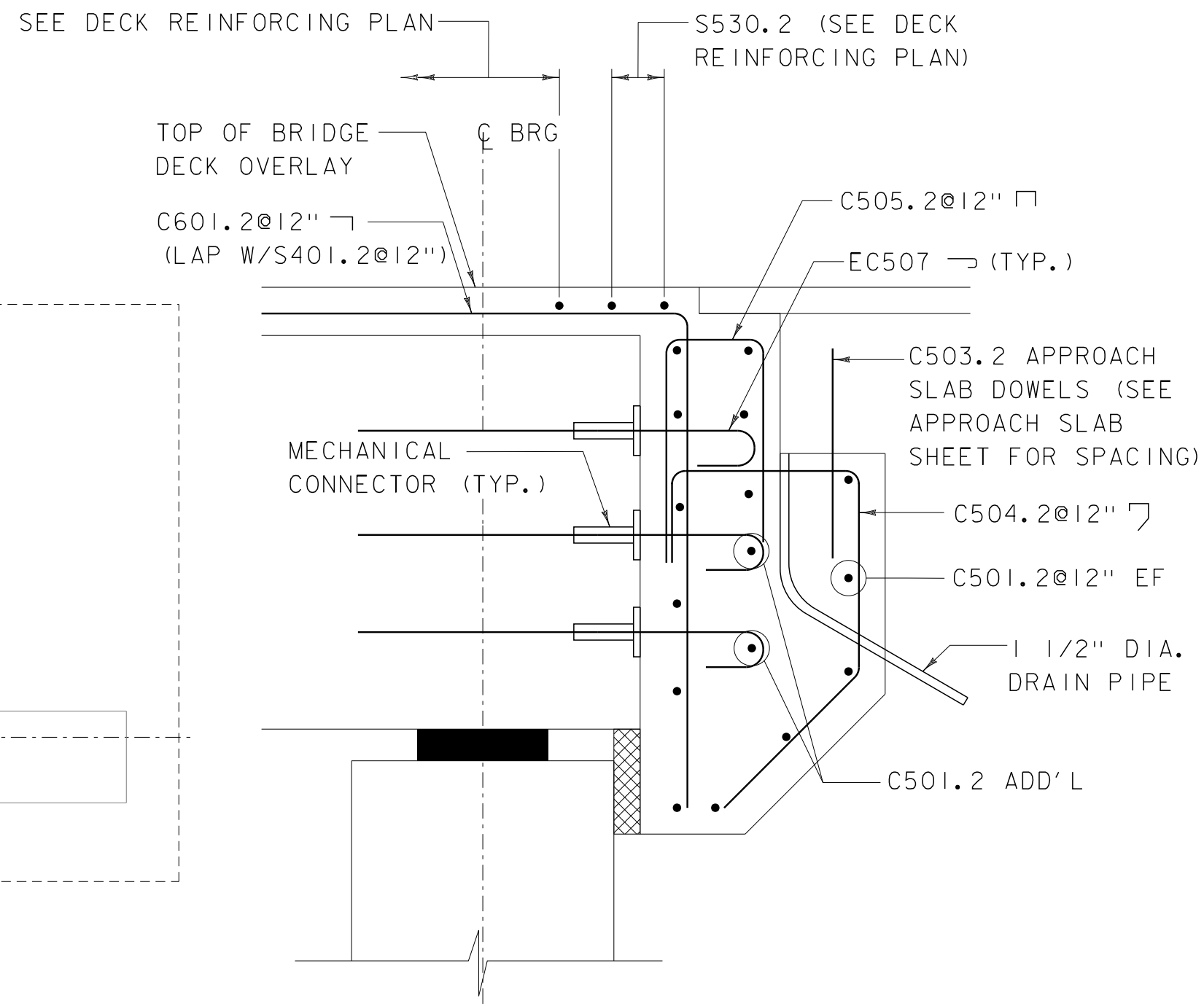


ABUTMENT #1 CURTAIN WALL REINFORCING PLAN  
(ABUTMENT #2 SIMILAR)

SCALE: 3/8" = 1'-0"

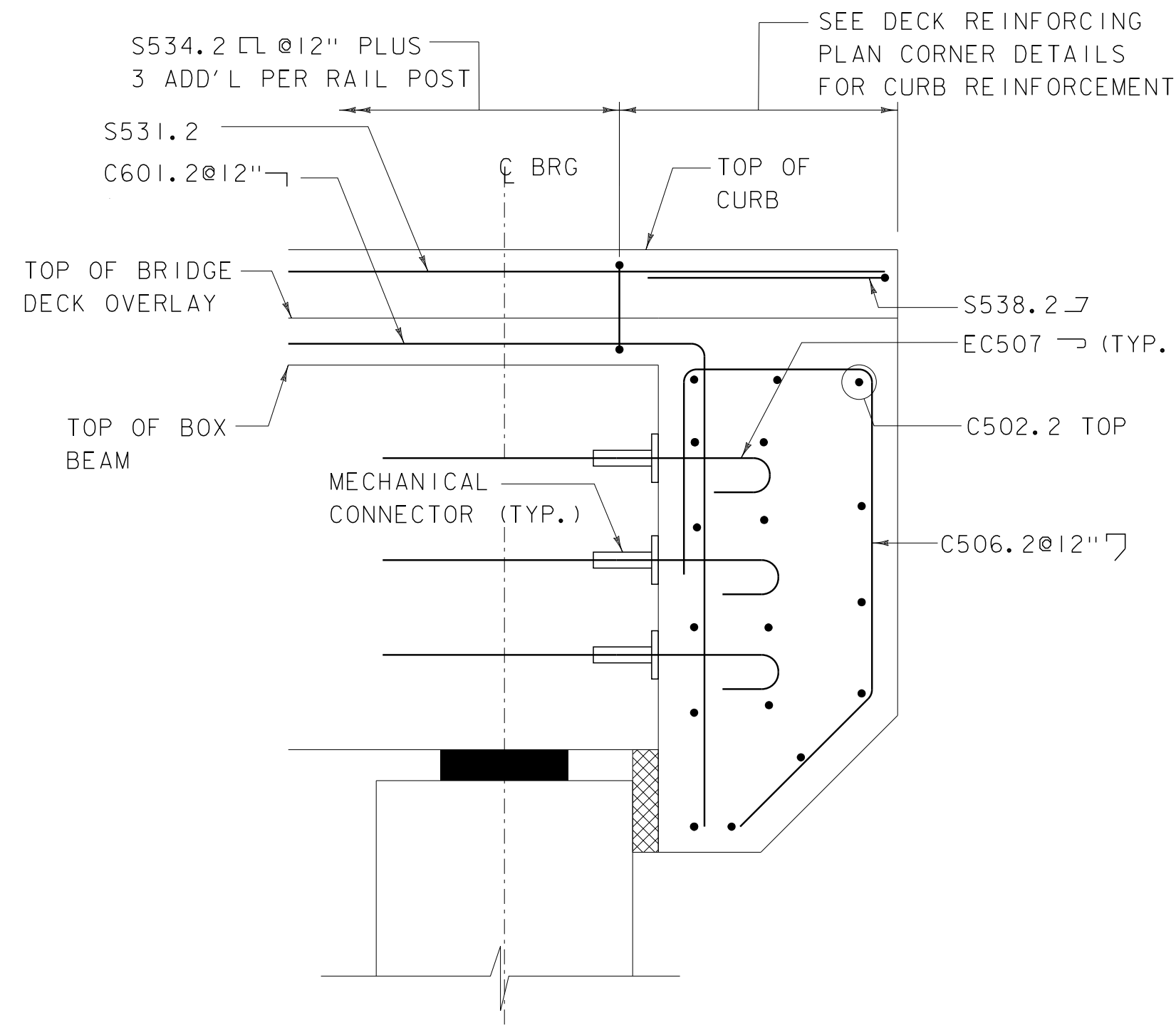


ABUTMENT #1 CURTAIN WALL REINFORCING ELEVATION  
(ABUTMENT #2 SIMILAR)



SECTION A-A

SCALE: 3/4" = 1'-0"



SECTION B-B

SCALE: 3/4" = 1'-0"



PARSONS BRINCKERHOFF  
650 ELM STREET  
MANCHESTER, NH 03101

PROJECT NAME: LINCOLN

PROJECT NUMBER: BRF 0188 (8)

FILE NAME: z10j066sub3.dgn  
PROJECT LEADER: K DONINGTON  
DESIGNED BY: K JAMES  
CURTAIN WALL DETAILS SHEET

PLOT DATE: 8-DEC-2014  
DRAWN BY: W GERHOLD  
CHECKED BY: R GAUDREAU  
SHEET 34 OF 62



# REINFORCING STEEL SCHEDULE

~ NOTES ~

1. UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING NO. 18 SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M 31 (ASTM A 615-S1). ALL BARS SHALL BE GRADE 60, UNLESS OTHERWISE DESIGNATED.
2. FOR TYPICAL BENDING DETAILS, RECOMMENDED PIN DIAMETER "D" OF BENDS AND HOOKS, AND OTHER STANDARD PRACTICE, SEE CURRENT CONCRETE REINFORCING STEEL INSTITUTE "MANUAL OF STANDARD PRACTICE".
3. BARS WHICH REQUIRE MORE ACCURATE BENDING THAN STANDARD PRACTICES SHOULD HAVE LIMITS INDICATED.
4. ALL DIMENSIONS ARE OUT TO OUT OF BAR EXCEPT "A" AND "G" ON STANDARD 180 DEGREE AND 135 DEGREE HOOKS.
5. "J" DIMENSION ON 180 DEGREE HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE. OTHERWISE, STANDARD HOOKS ARE TO BE USED.
6. "H" DIMENSION ON STIRRUPS TO BE SHOWN ONLY WHEN NECESSARY TO MAINTAIN CLEARANCES.
7. WHERE SLOPE DIFFERS FROM 45 DEGREES, DIMENSIONS "H" AND "K" MUST BE SHOWN.
8. ▲ DENOTES BARS TO BE CUT IN FIELD.
9. * DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES.
10. △ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.
11. E IN BAR MARK PREFIX DENOTES EPOXY COATED REINFORCING STEEL.

~ REINFORCING STEEL CORROSION RESISTANCE LEVEL ~

THE REINFORCING STEEL MARKS IN THIS SCHEDULE INDICATE THE REQUIRED BAR CORROSION RESISTANCE LEVEL. CORROSION RESISTANCE LEVEL IS DENOTED WITH A .2 FOR LEVEL TWO OR .3 FOR LEVEL THREE SUFFIX. .1 FOR LEVEL ONE IS TO BE OMITTED. THE BAR MATERIAL BAR STEEL GRADE PROVIDED FOR EACH CORROSION LEVEL WILL BE RECORDED ON THE P SHEET FOR AS-BUILT RECORD PLAN ARCHIVES.

ASTM STANDARD REINFORCING BARS			
WEIGHT POUNDS PER FOOT	NOMINAL DIMENSIONS ROUND SECTION DIAMETER INCHES	AREA INCHES ²	PERIMETER INCHES
0.376	0.375	0.11	1.178
0.668	0.500	0.20	1.571
1.043	0.625	0.31	1.963
1.502	0.750	0.44	2.356
2.044	0.875	0.60	2.749
2.670	1.000	0.79	3.142
3.400	1.128	1.00	3.544
4.303	1.270	1.27	3.990
5.313	1.410	1.56	4.430
7.65	1.693	2.25	5.32
13.60	2.257	4.00	7.09

PROJECT NAME: **LINCOLN**

PROJECT NUMBER: **BRF 0188 (8)**

FILE NAME: **52545TSK01_engnreinf.xls**

PROJECT MANAGER: **G.K. DONINGTON**

DESIGNED BY: **K. JAMES**

**REINFORCING STEEL SCHEDULE**

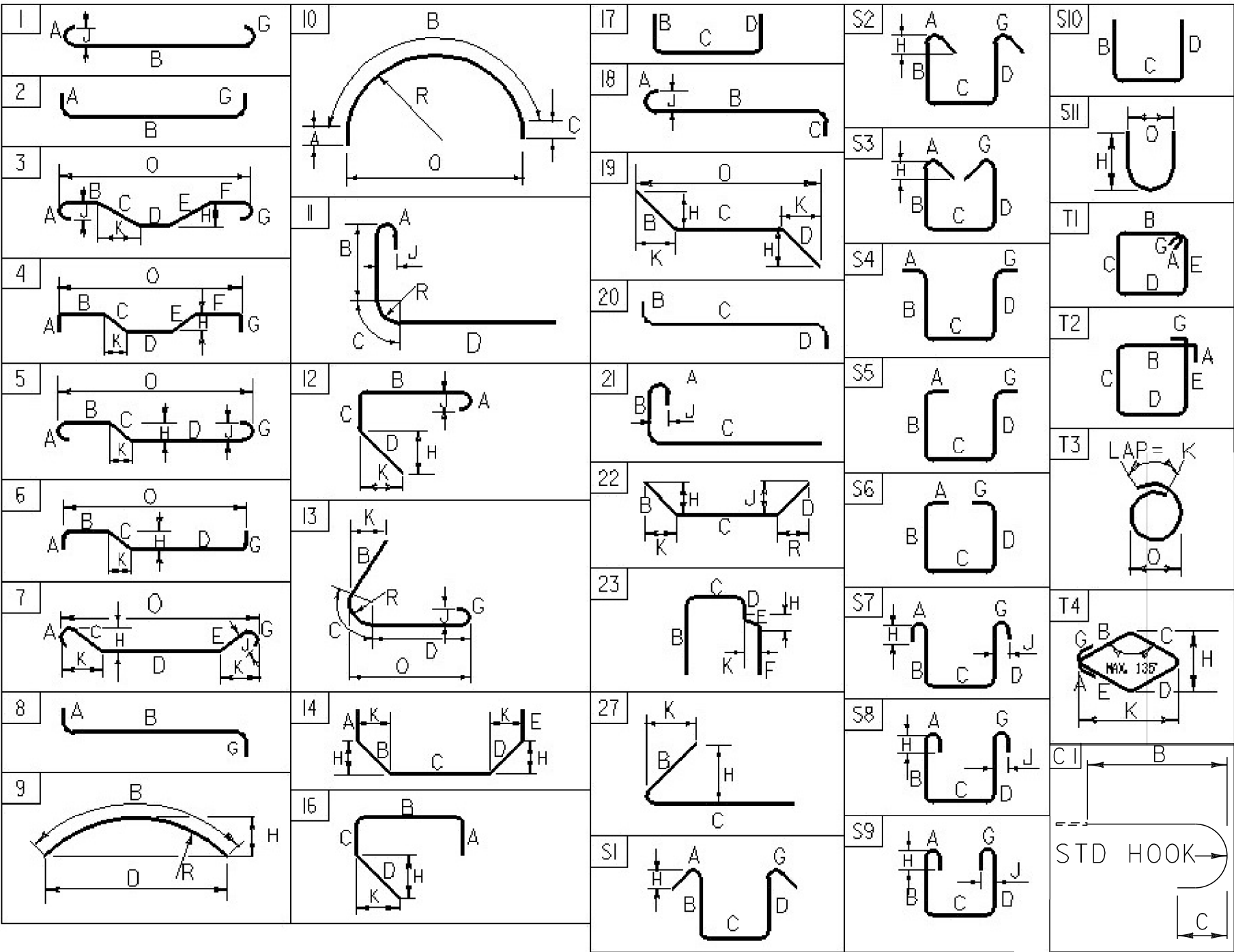
PLOT DATE: **8-DEC-20**

DRAWN BY: **W. GERHART**

CHECKED BY: **A. STOCHEL**

SHEET **35** OF **60**

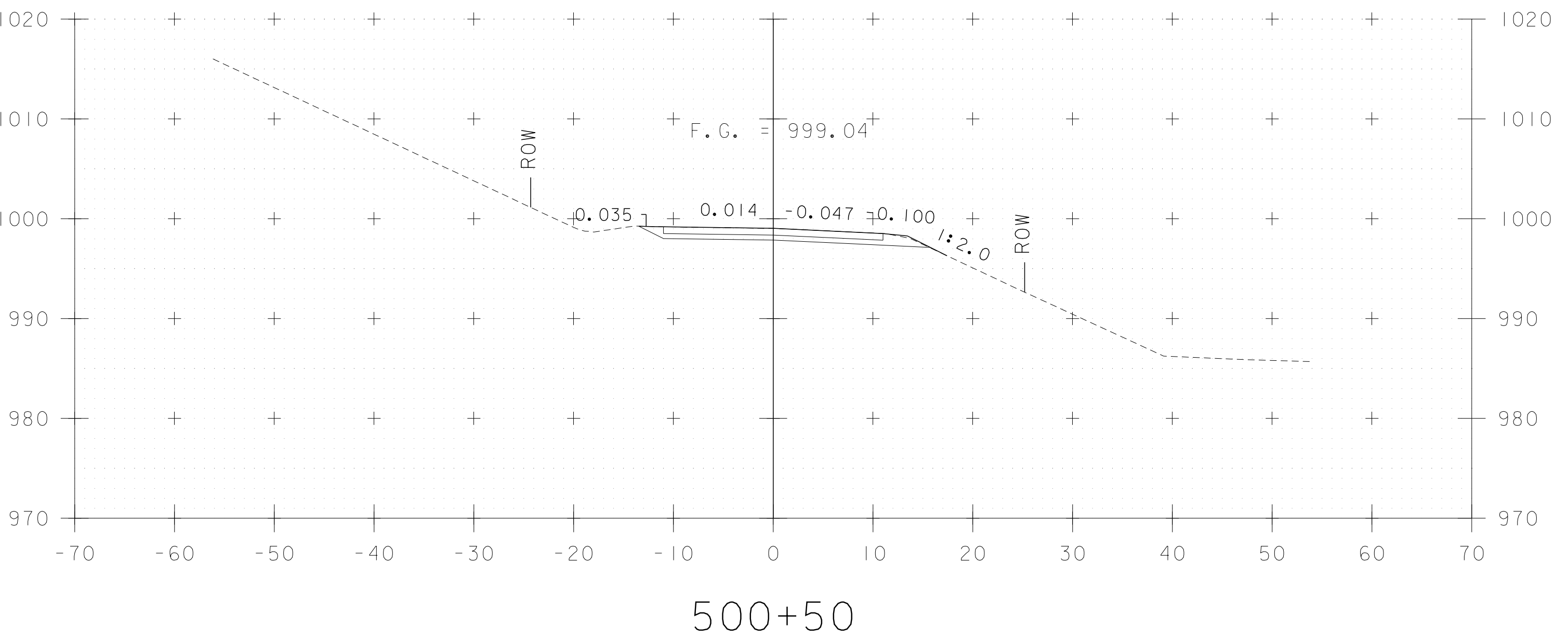
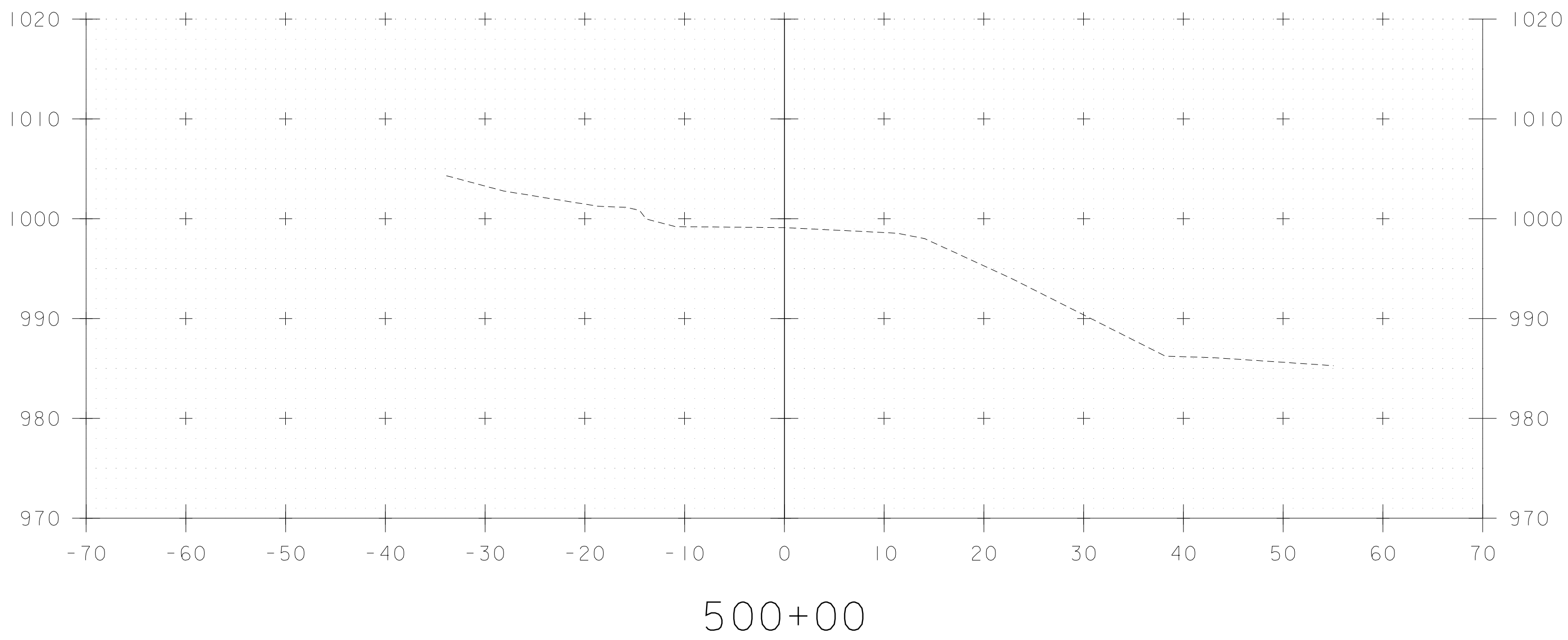
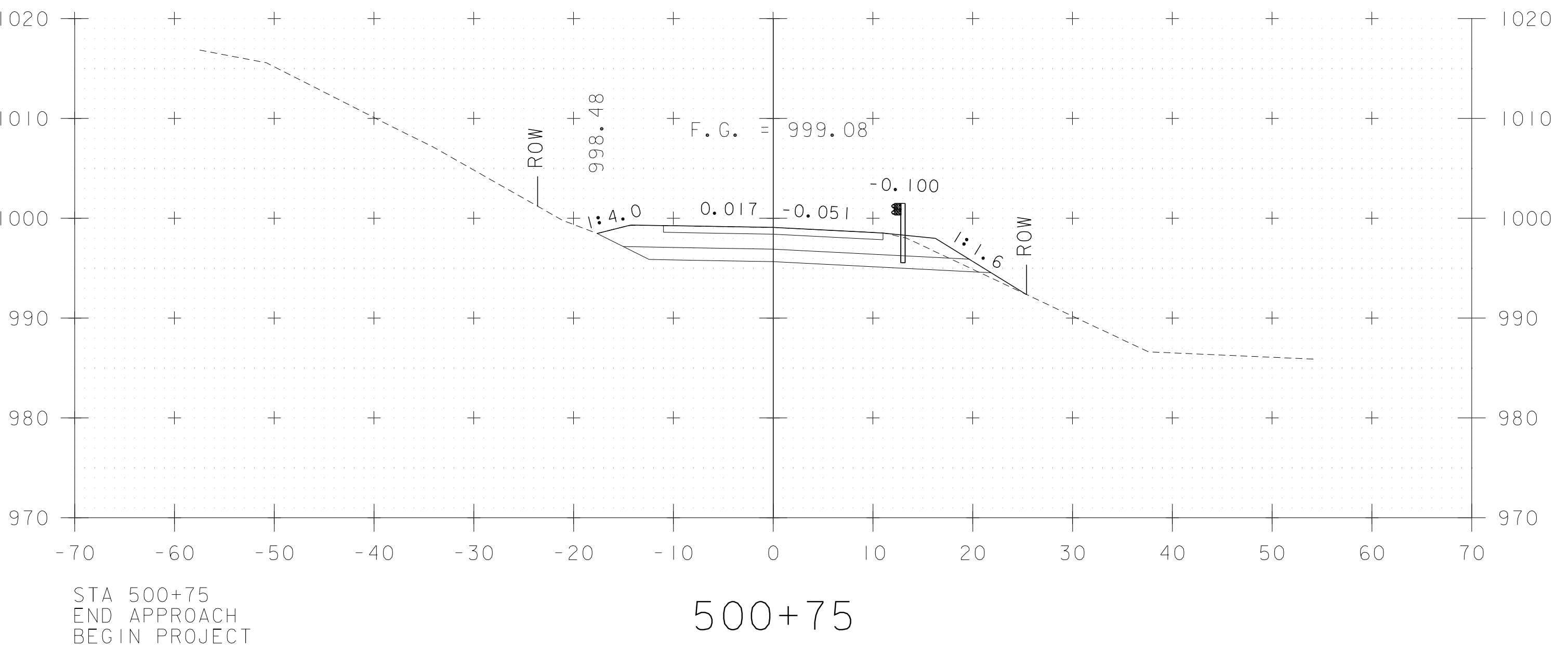
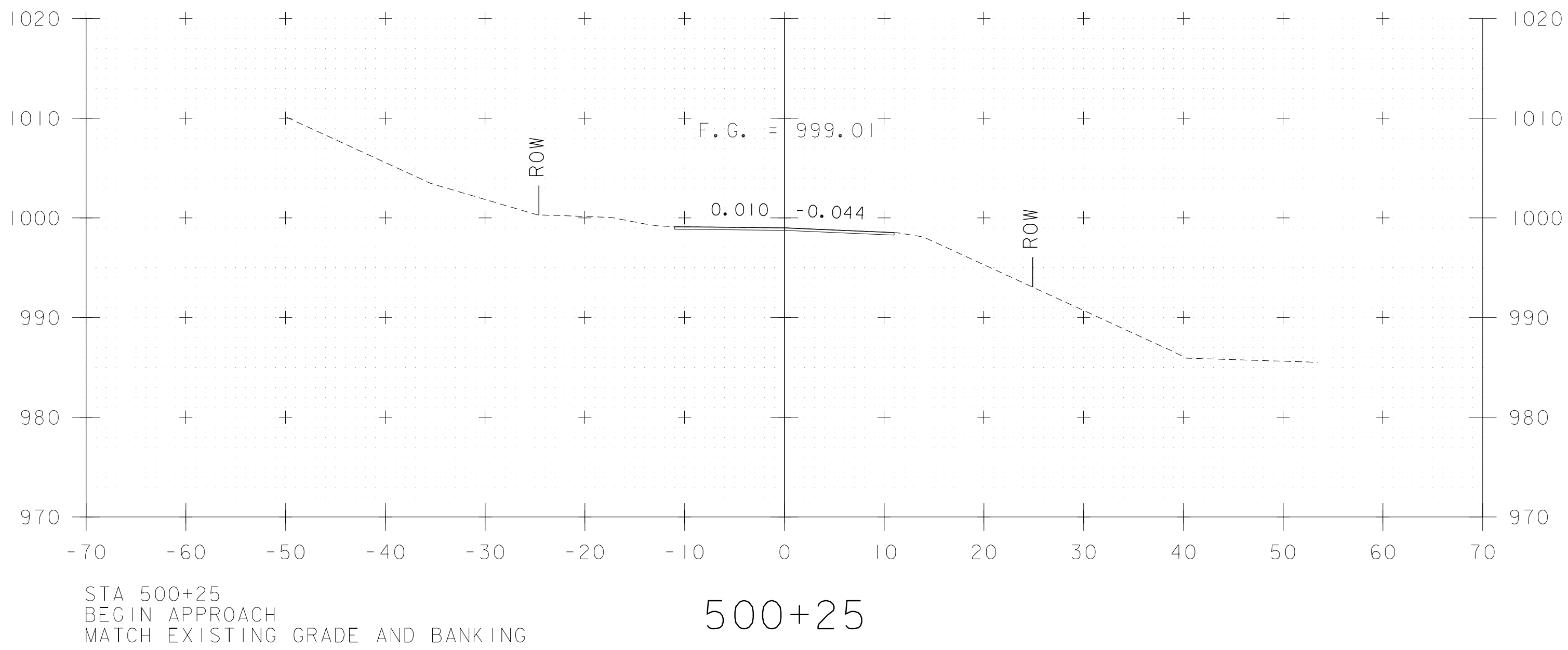
1. UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING NO. 18 SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M 31 (ASTM A 615-S1). ALL BARS SHALL BE GRADE 60, UNLESS OTHERWISE DESIGNATED.
2. FOR TYPICAL BENDING DETAILS, RECOMMENDED PIN DIAMETER "D" OF BENDS AND HOOKS, AND OTHER STANDARD PRACTICE, SEE CURRENT CONCRETE REINFORCING STEEL INSTITUTE "MANUAL OF STANDARD PRACTICE".
3. BARS WHICH REQUIRE MORE ACCURATE BENDING THAN STANDARD PRACTICES SHOULD HAVE LIMITS INDICATED.
4. ALL DIMENSIONS ARE OUT TO OUT OF BAR EXCEPT "A" AND "G" ON STANDARD 180 DEGREE AND 135 DEGREE HOOKS.
5. "J" DIMENSION ON 180 DEGREE HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE. OTHERWISE, STANDARD HOOKS ARE TO BE USED.
6. "H" DIMENSION ON STIRRUPS TO BE SHOWN ONLY WHEN NECESSARY TO MAINTAIN CLEARANCES.
7. WHERE SLOPE DIFFERS FROM 45 DEGREES, DIMENSIONS "H" AND "K" MUST BE SHOWN.
8. ▲ DENOTES BARS TO BE CUT IN FIELD.
9. * DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES.
0. △ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.
1. E IN BAR MARK PREFIX DENOTES EPOXY COATED REINFORCING STEEL.



ASTM STANDARD REINFORCING BARS				
BAR SIZE DESIGNATION	WEIGHT POUNDS PER FOOT	NOMINAL DIMENSIONS ROUND SECTION		
		DIAMETER INCHES	AREA INCHES ²	PERIMETER INCHES
#3	0.376	0.375	0.11	1.178
#4	0.668	0.500	0.20	1.571
#5	1.043	0.625	0.31	1.963
#6	1.502	0.750	0.44	2.356
#7	2.044	0.875	0.60	2.749
#8	2.670	1.000	0.79	3.142
#9	3.400	1.128	1.00	3.544
#10	4.303	1.270	1.27	3.990
#11	5.313	1.410	1.56	4.430
#14	7.65	1.693	2.25	5.32
#18	13.60	2.257	4.00	7.09

THE REINFORCING STEEL MARKS IN THIS SCHEDULE INDICATE THE REQUIRED BAR CORROSION RESISTANCE LEVEL. CORROSION RESISTANCE LEVEL IS DENOTED WITH A .2 FOR LEVEL TWO SUFFIX OR .3 FOR LEVEL THREE SUFFIX. .1 FOR LEVEL ONE IS TO BE OMITTED. THE BAR MATERIAL TYPE AND BAR STEEL GRADE PROVIDED FOR EACH CORROSION LEVEL WILL BE RECORDED ON THE PLAN SET P SHEET FOR AS-BUILT RECORD PLAN ARCHIVES.

PROJECT NAME:	LINCOLN	
PROJECT NUMBER:	BRF 0188 (8)	
<hr/>		
FILE NAME: 52545TSK01_engreinf.xls	PLOT DATE:	8-DEC-2014
PROJECT MANAGER: G.K. DONINGTON	DRAWN BY:	W. GERHOLD
DESIGNED BY: K. JAMES	CHECKED BY:	A. STOCKIN
REINFORCING STEEL SCHEDULE	SHEET	35 OF 62

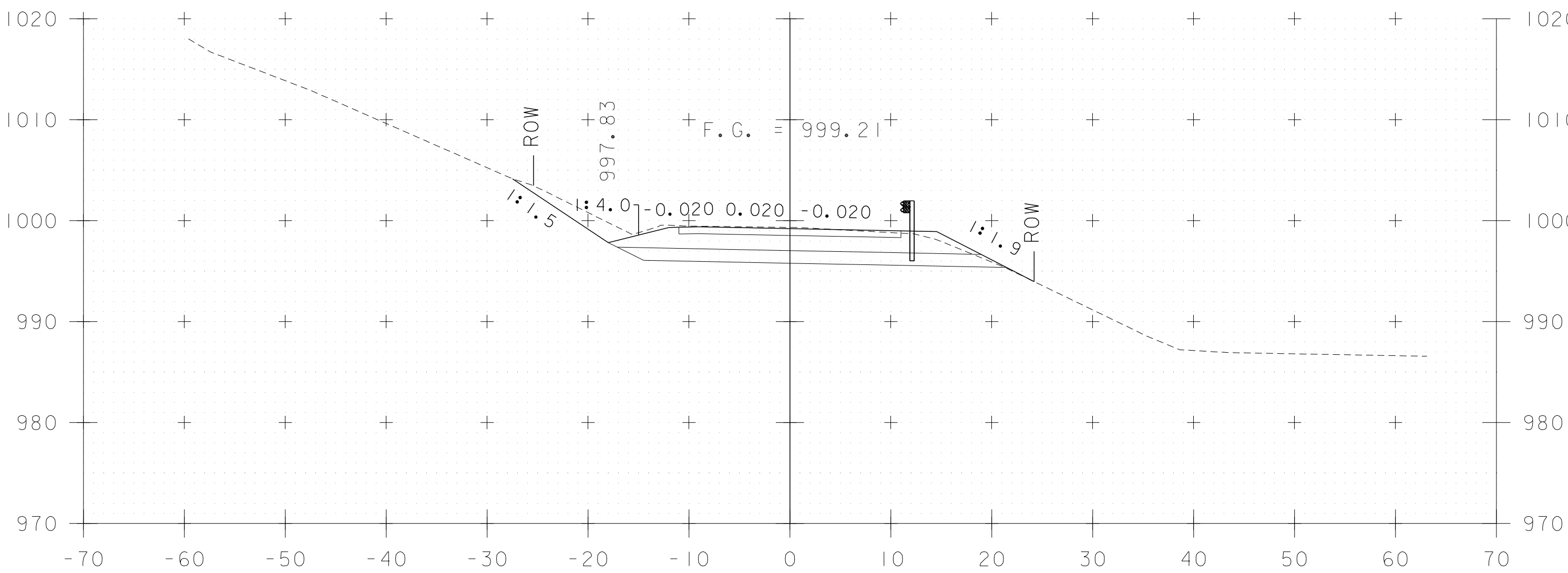


**MAINLINE CROSS SECTIONS**  
**STA. 500+00 - STA. 500+75**

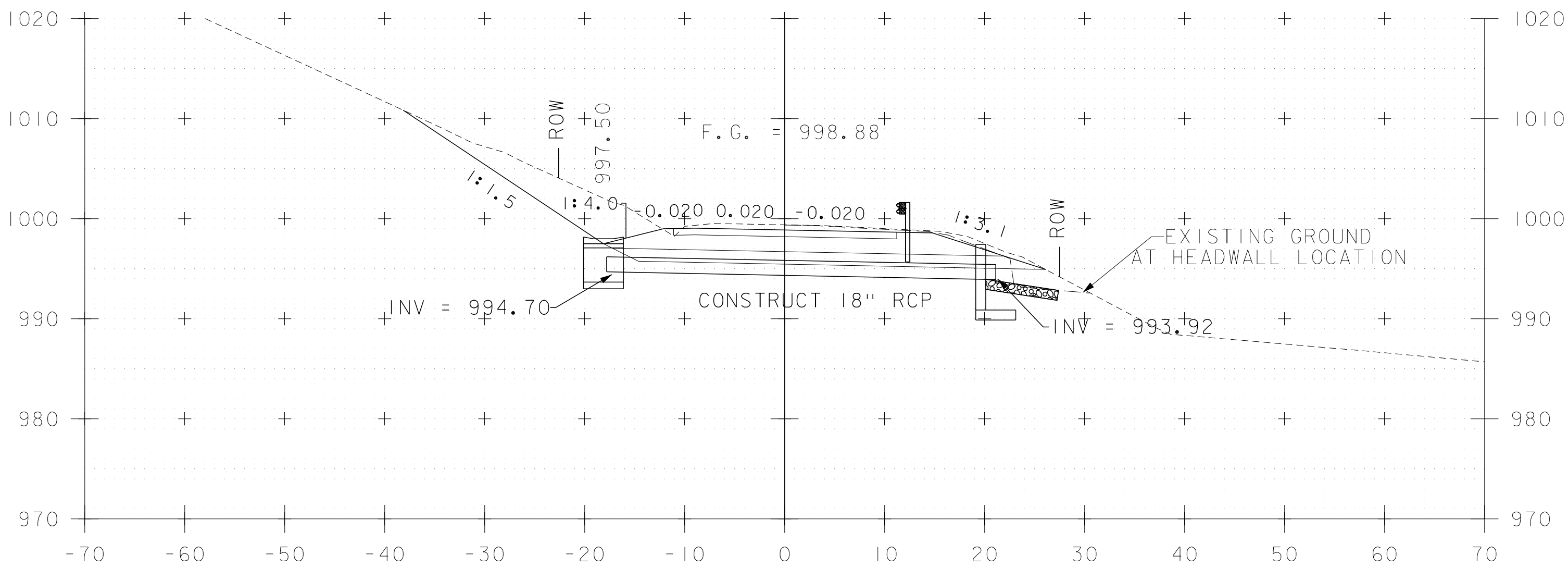
PROJECT NAME:	LINCOLN
PROJECT NUMBER:	BRF 0188 (8)
FILE NAME:	z10j066xsl.dgn
PROJECT LEADER:	G.K. DONINGTON
DESIGNED BY:	C CARNEY
MAINLINE CROSS SECTIONS (I)	
PLOT DATE:	8-DEC-2014
DRAWN BY:	C CARNEY
CHECKED BY:	R BENJAMIN
SHEET 36	OF 62



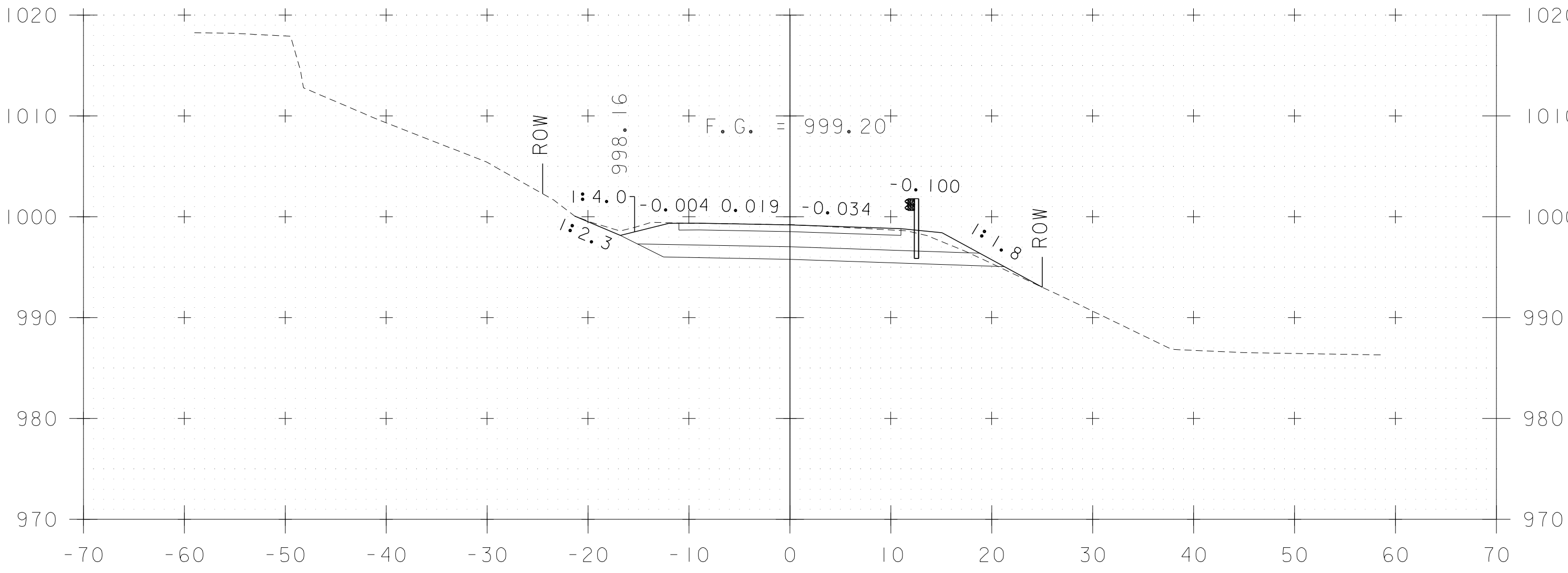
PARSONS BRINCKERHOFF  
650 ELM STREET  
MANCHESTER, NH 03101



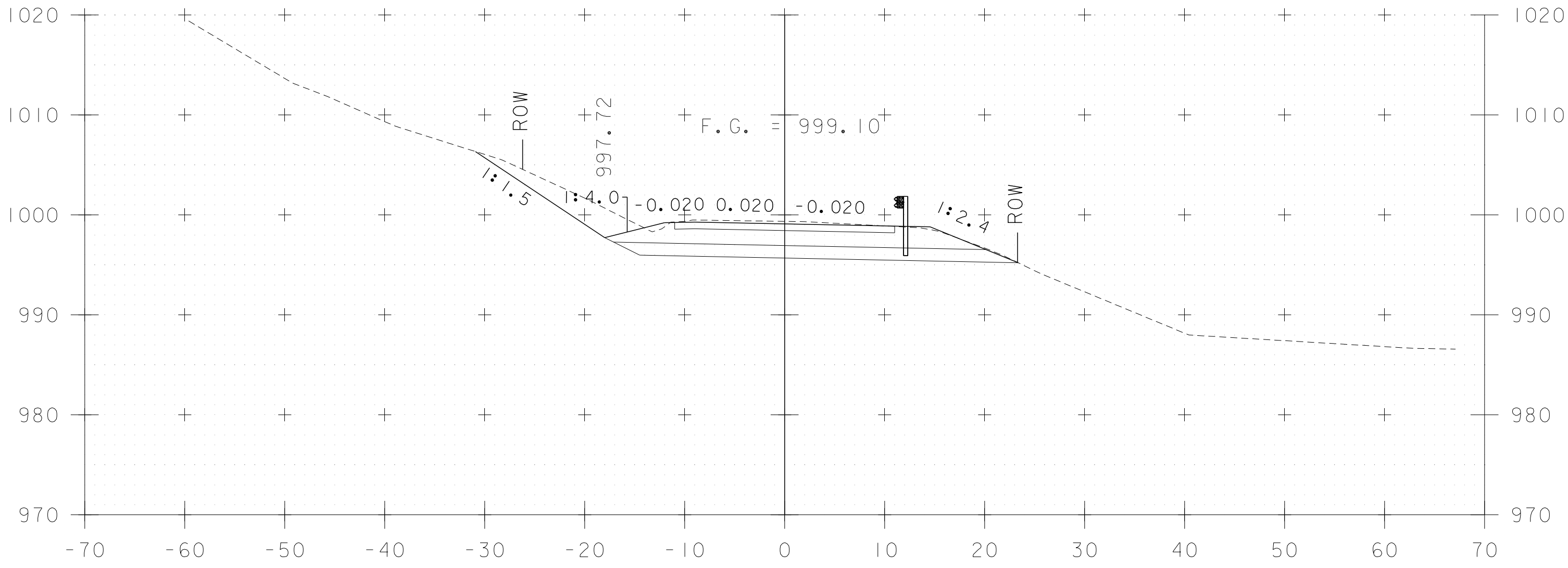
501+25



501+75



501+00

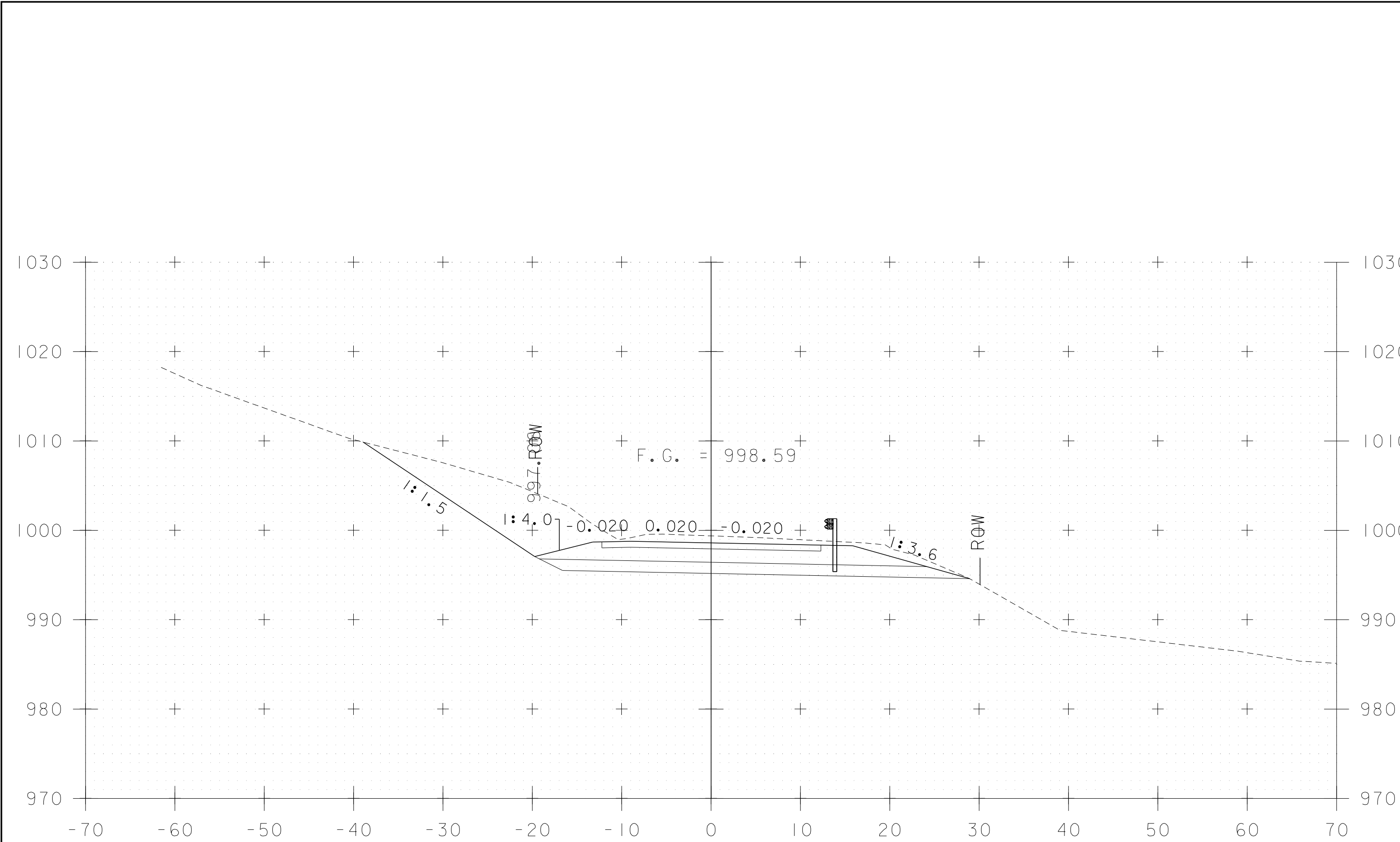


501+50

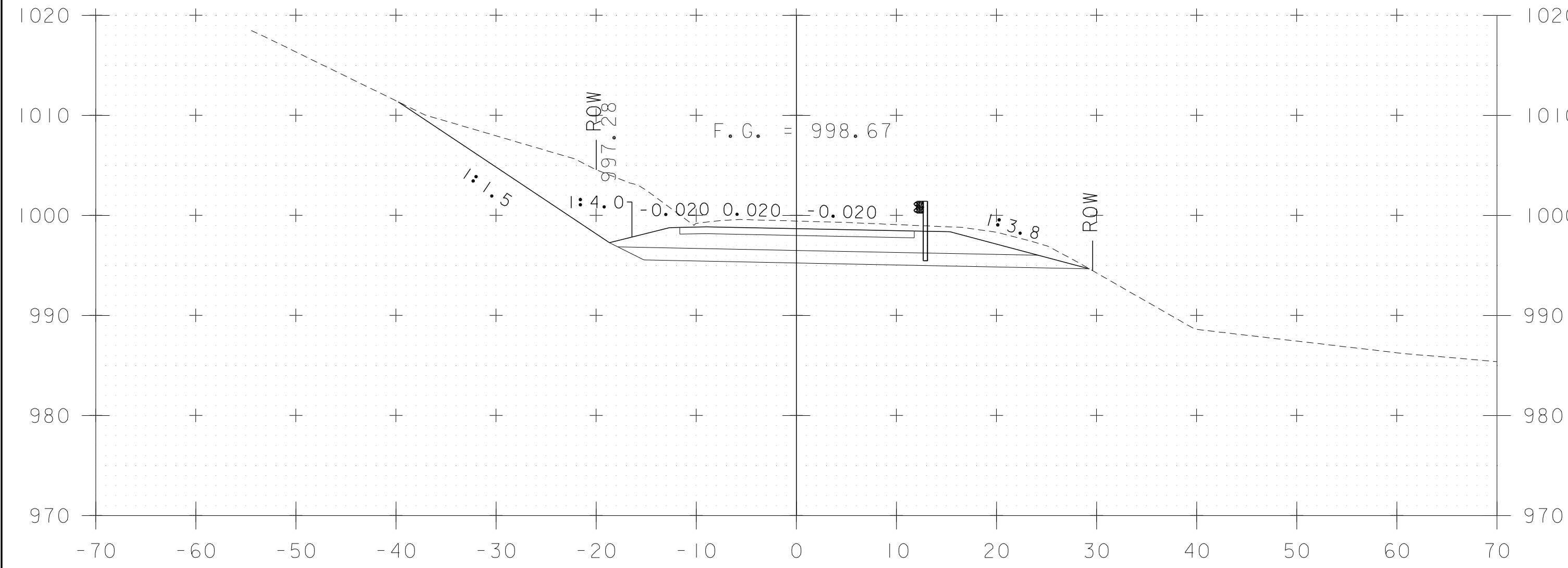
**MAINLINE CROSS SECTIONS**  
**STA. 501+00 - STA. 501+75**

PROJECT NAME:	LINCOLN
PROJECT NUMBER:	BRF 0188 (8)
FILE NAME:	z10j066xsl.dgn
PROJECT LEADER:	G.K. DONINGTON
DESIGNED BY:	C CARNEY
MAINLINE CROSS SECTIONS (2)	
PLOT DATE:	8-DEC-2014
DRAWN BY:	C CARNEY
CHECKED BY:	R BENJAMIN
SHEET 37	OF 62

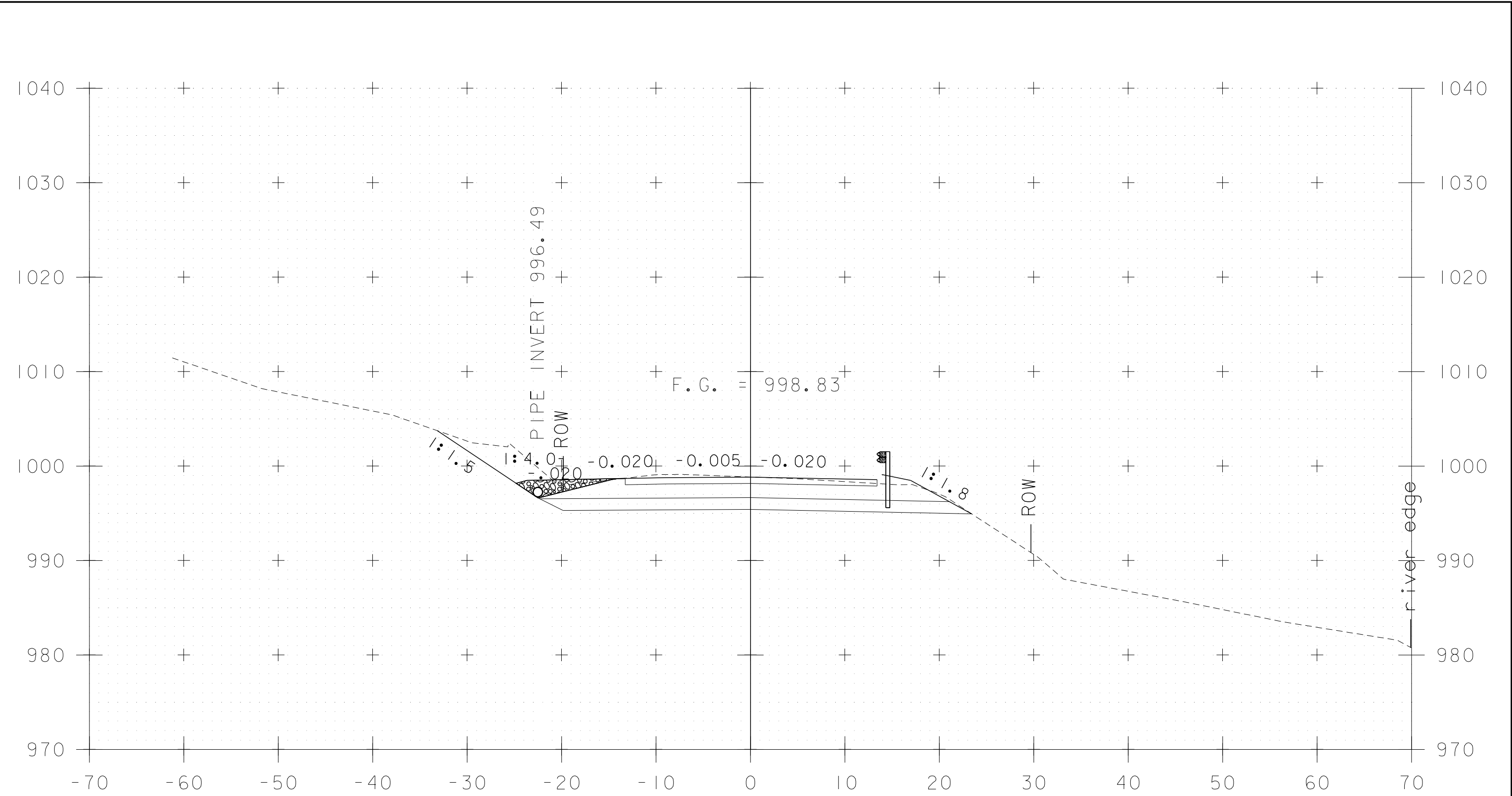




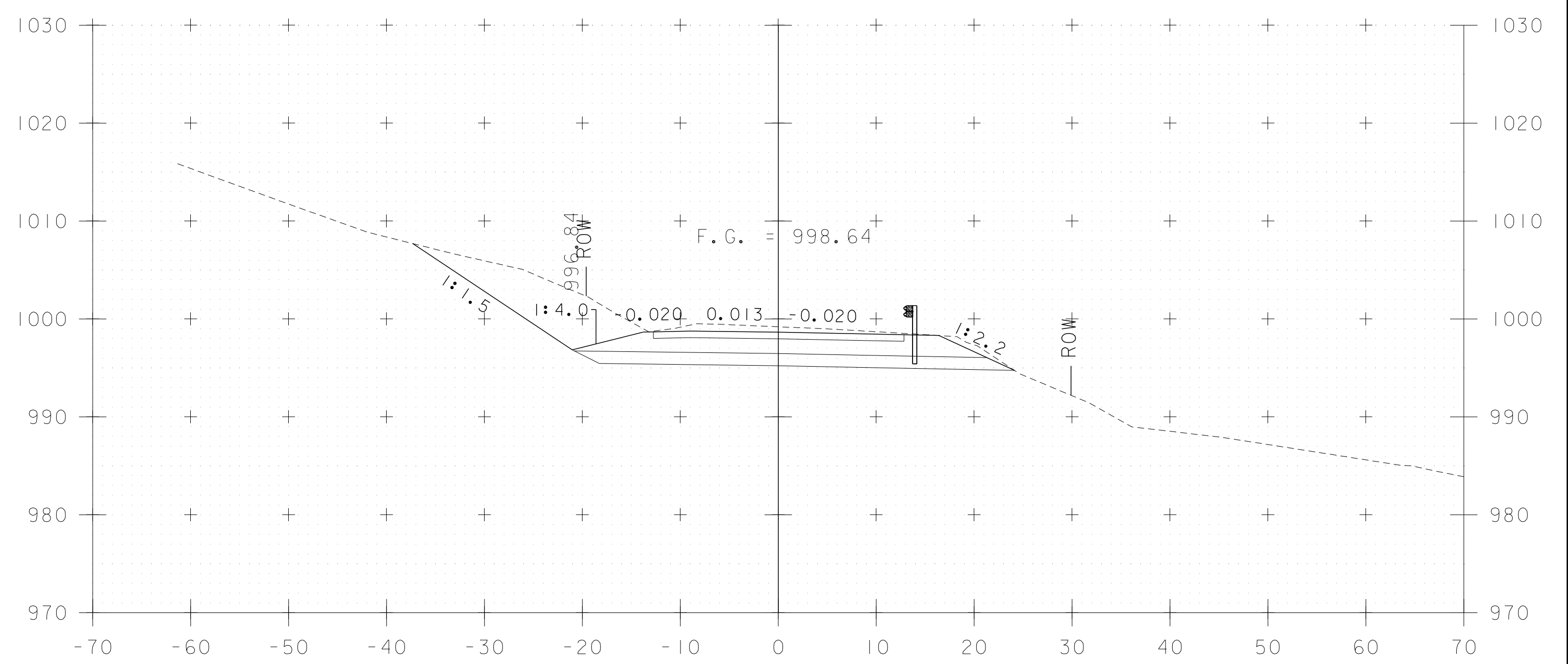
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502+00



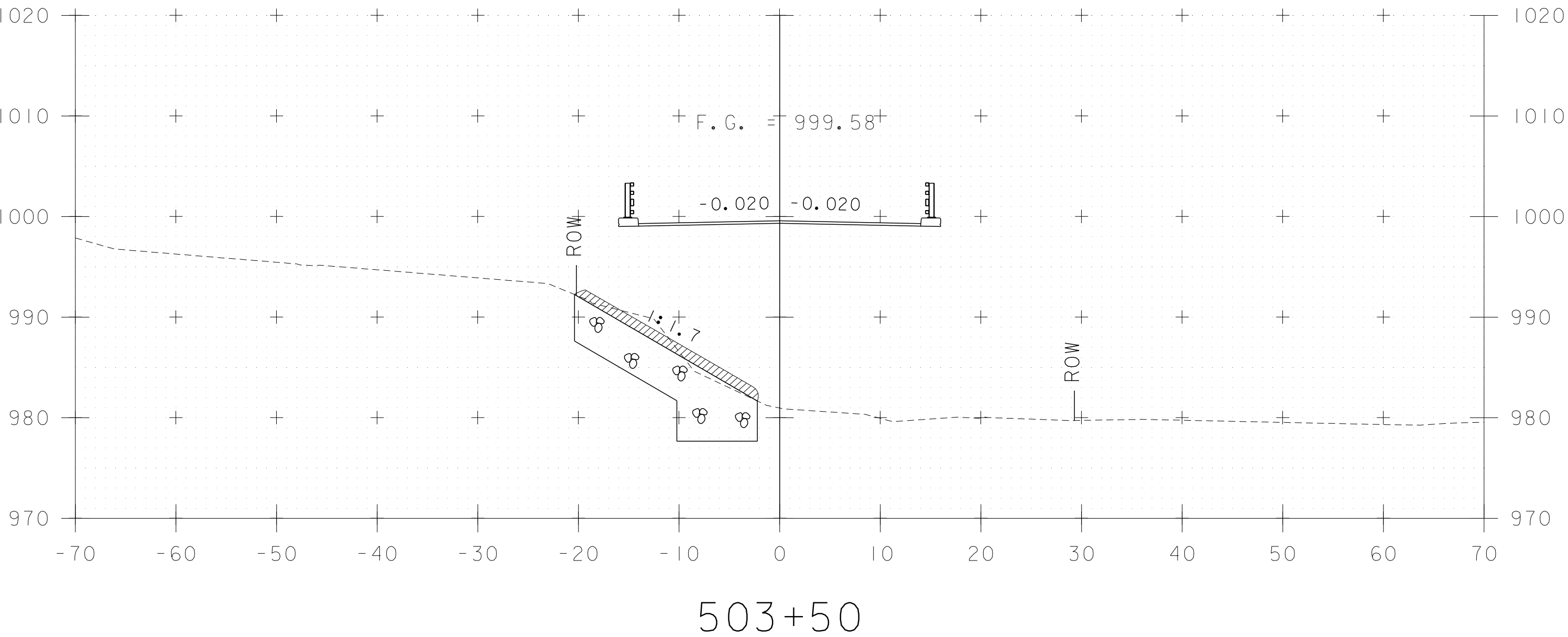
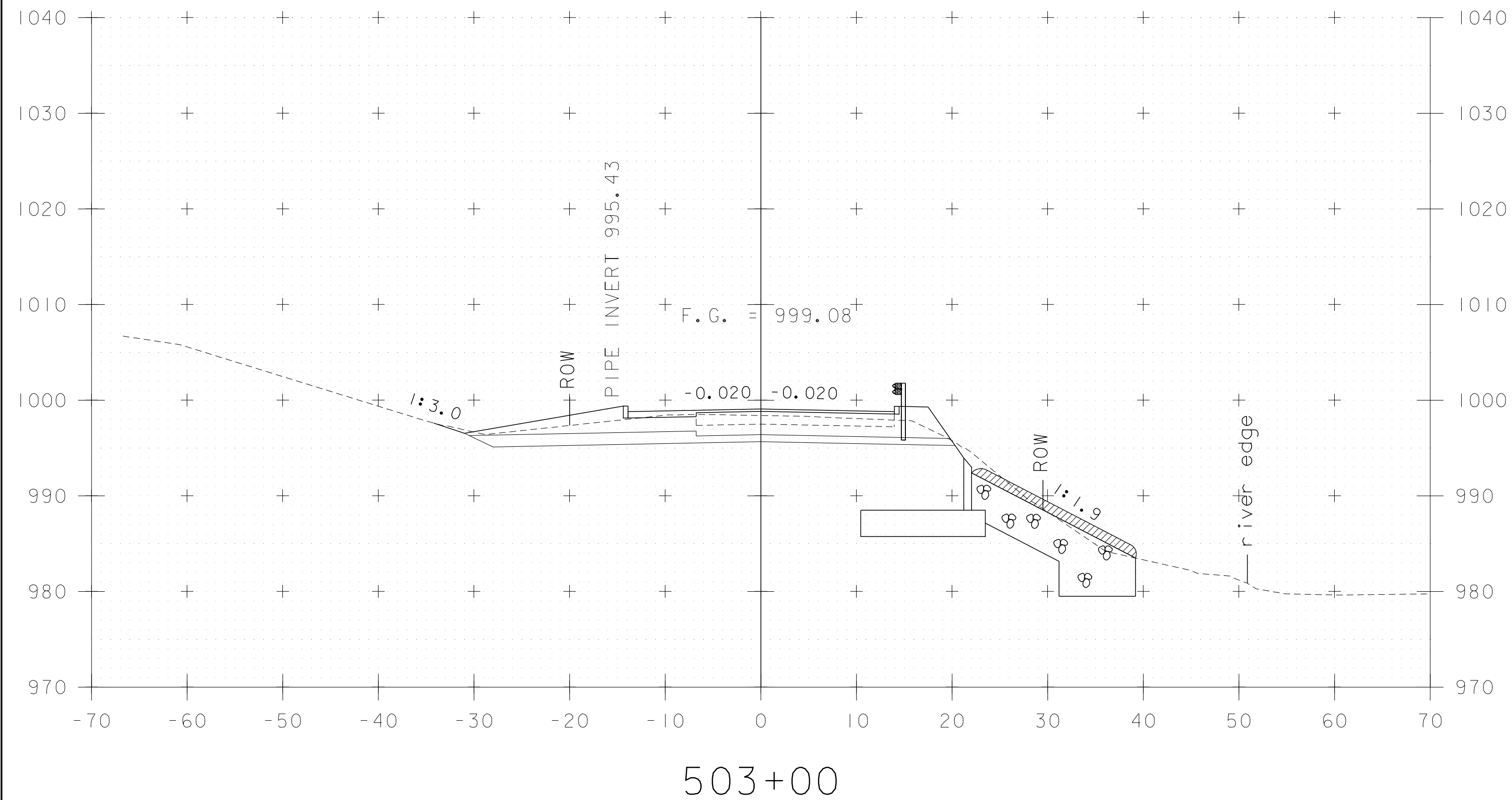
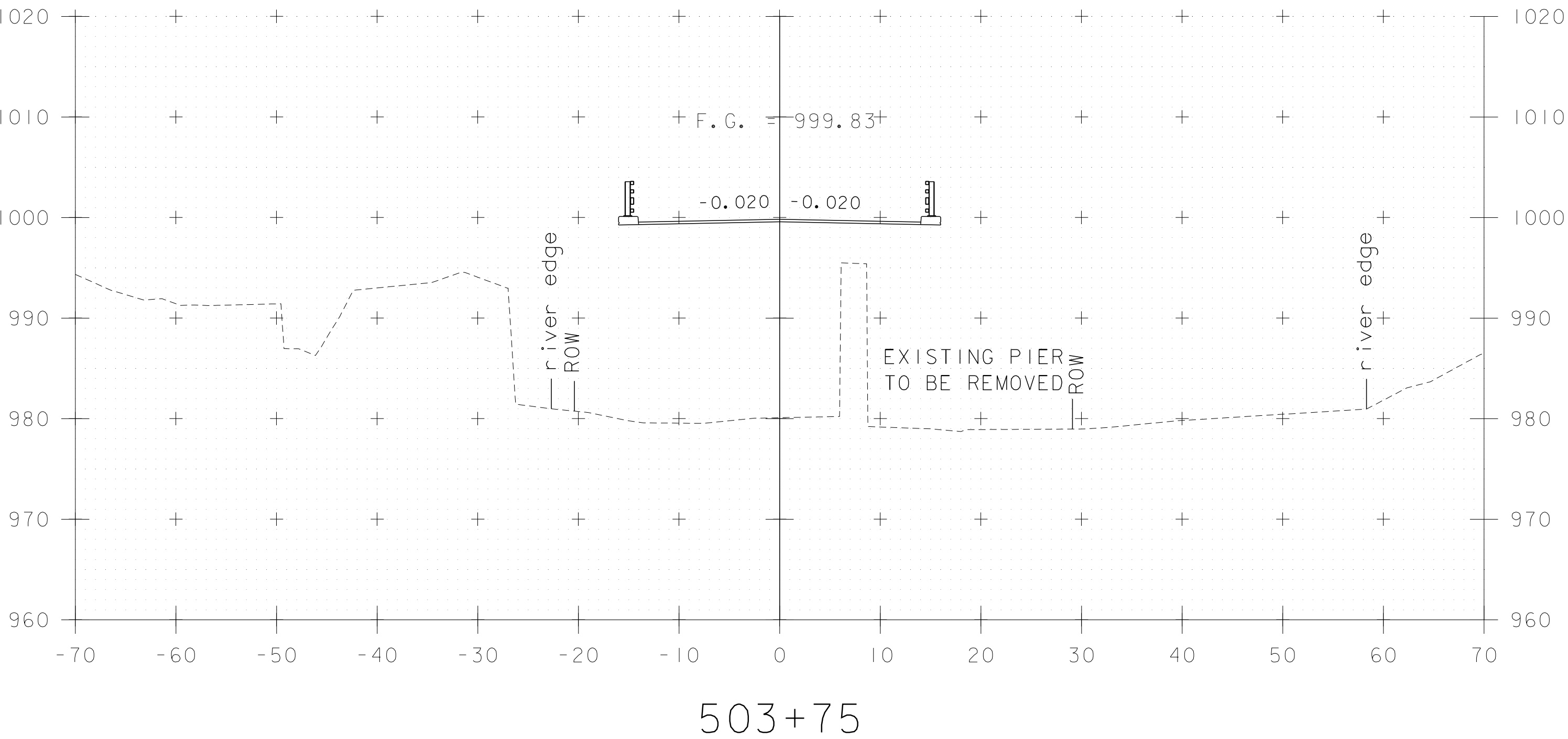
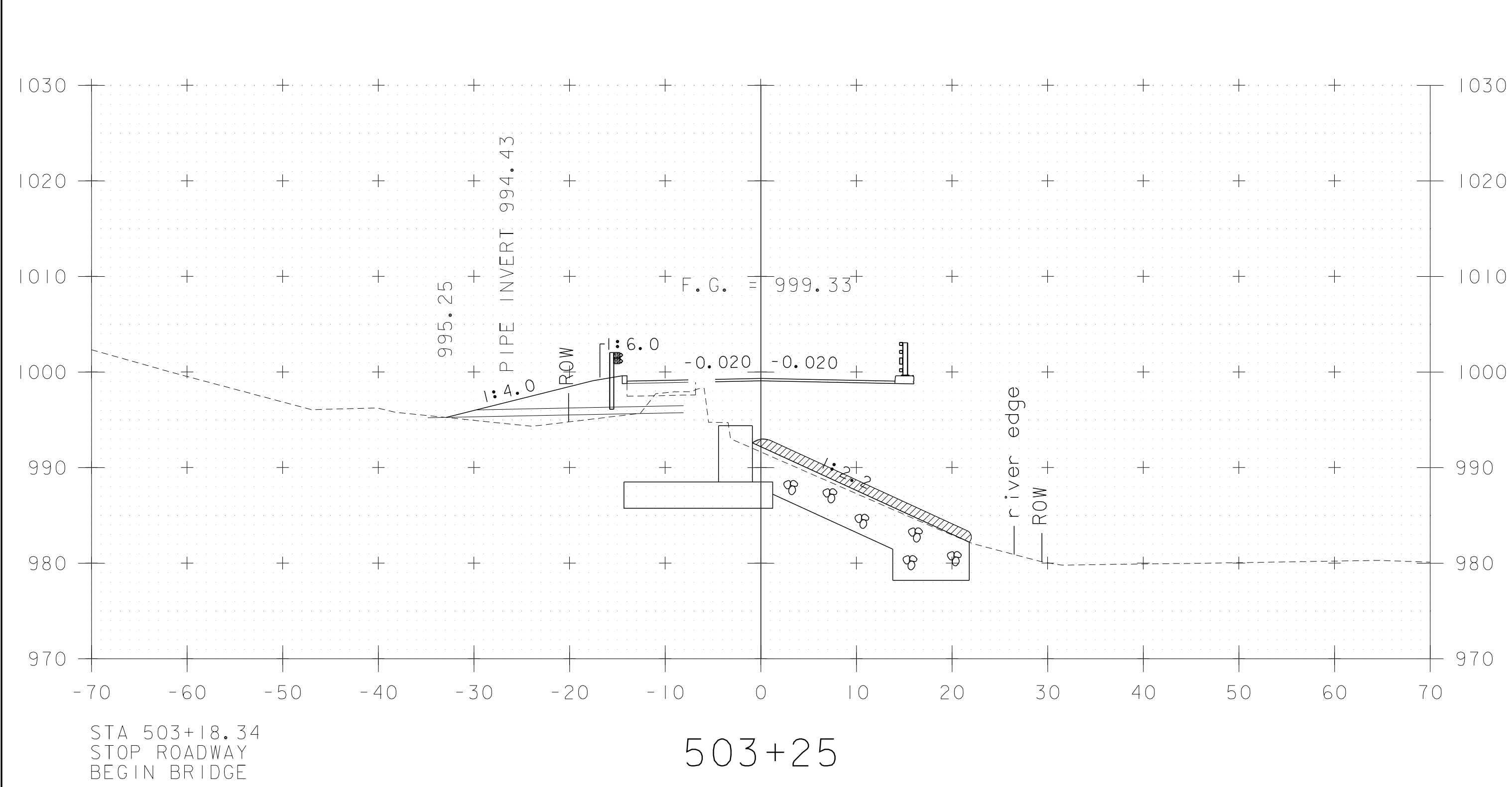
502+75



502+50

**MAINLINE CROSS SECTIONS**  
**STA. 502+00 - STA. 502+75**

PROJECT NAME:	LINCOLN
PROJECT NUMBER:	BRF 0188 (8)
FILE NAME:	z10j066xsl.dgn
PROJECT LEADER:	G.K. DONINGTON
DESIGNED BY:	C CARNEY
MAINLINE CROSS SECTIONS (3)	PLOT DATE: 8-DEC-2014 DRAWN BY: C CARNEY CHECKED BY: R BENJAMIN SHEET 38 OF 62

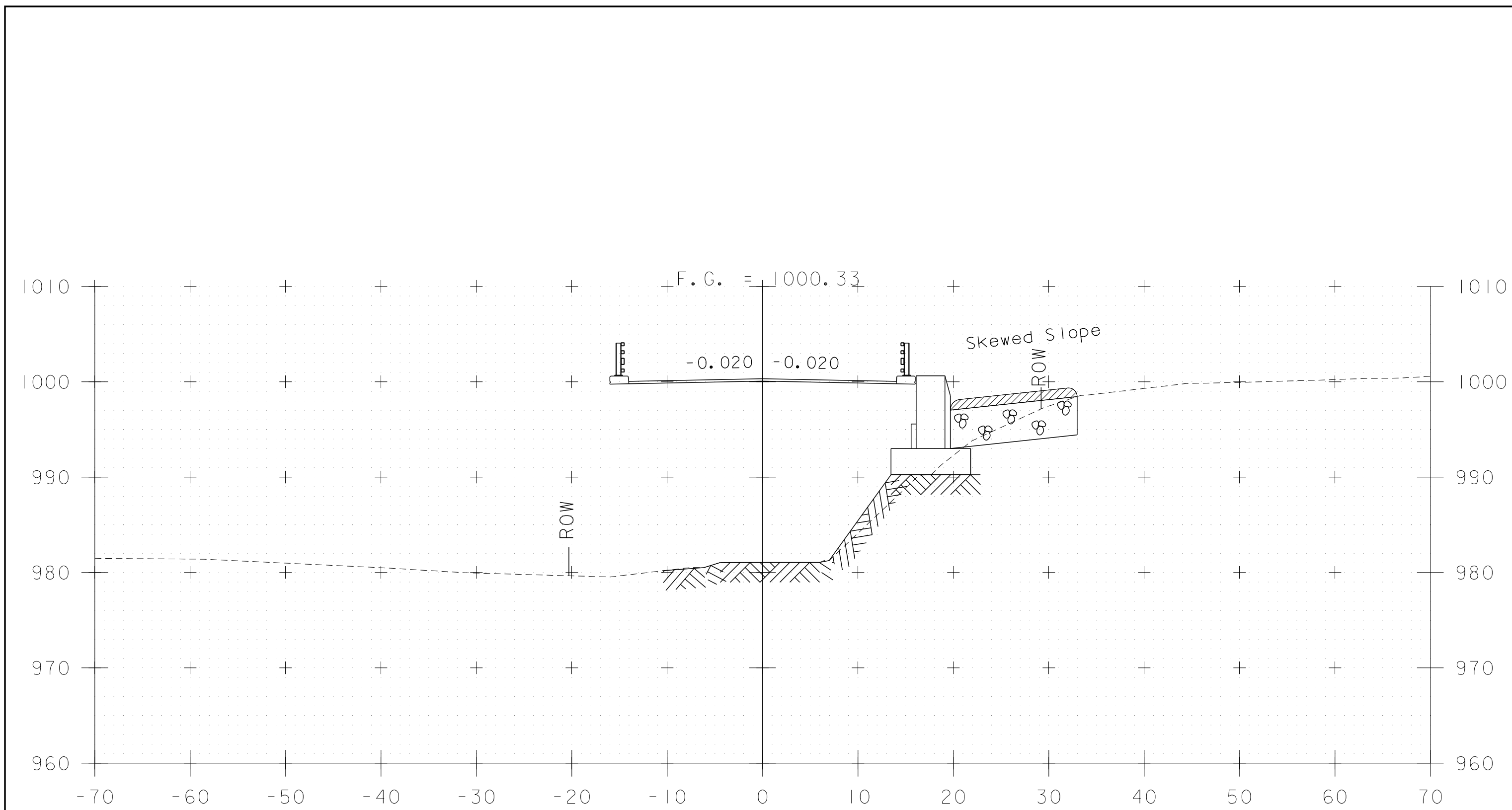


**MAINLINE CROSS SECTIONS**  
**STA. 503+00 - STA. 503+75**

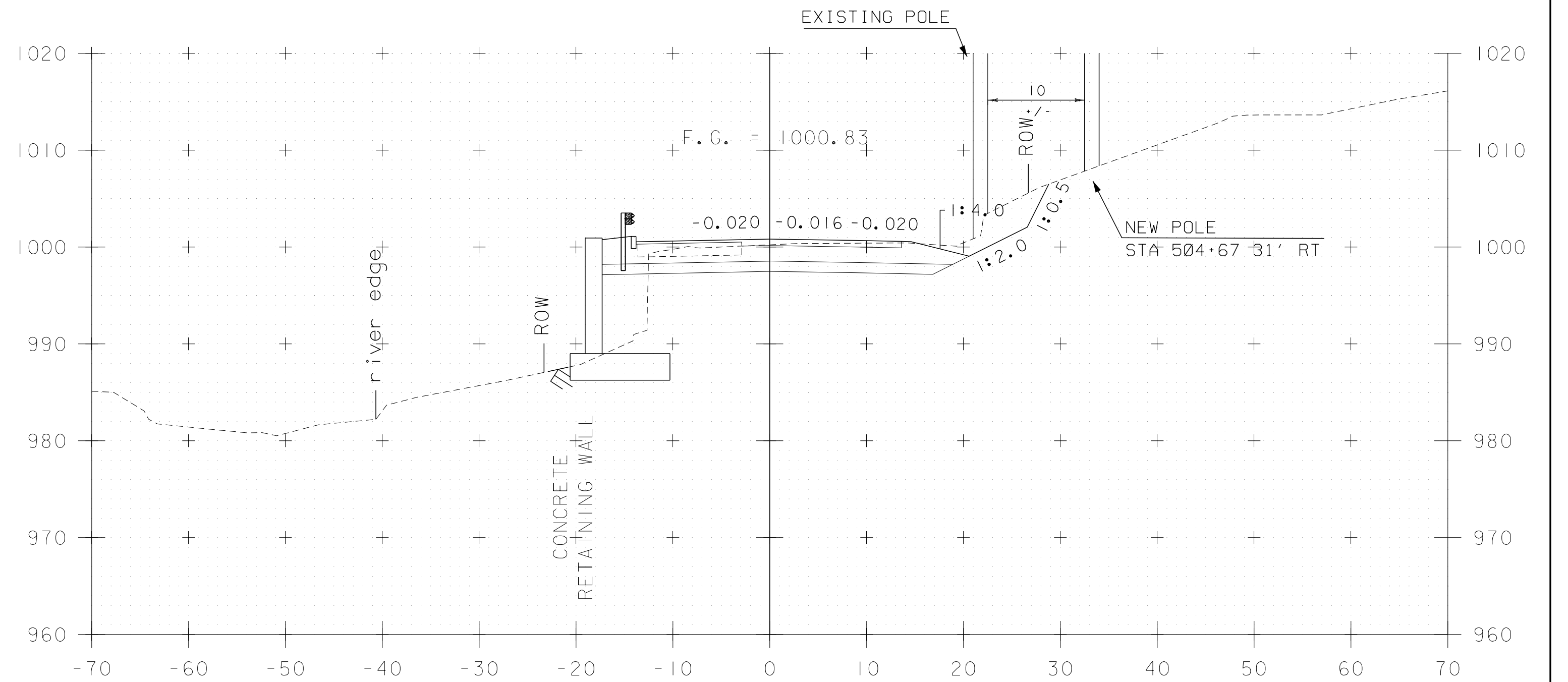
PROJECT NAME:	LINCOLN
PROJECT NUMBER:	BRF 0188 (8)
FILE NAME:	z10j066xsl.dgn
PROJECT LEADER:	G.K. DONINGTON
DESIGNED BY:	C CARNEY
MAINLINE CROSS SECTIONS (4)	
PLOT DATE:	8-DEC-2014
DRAWN BY:	C CARNEY
CHECKED BY:	R BENJAMIN
SHEET 39	OF 62



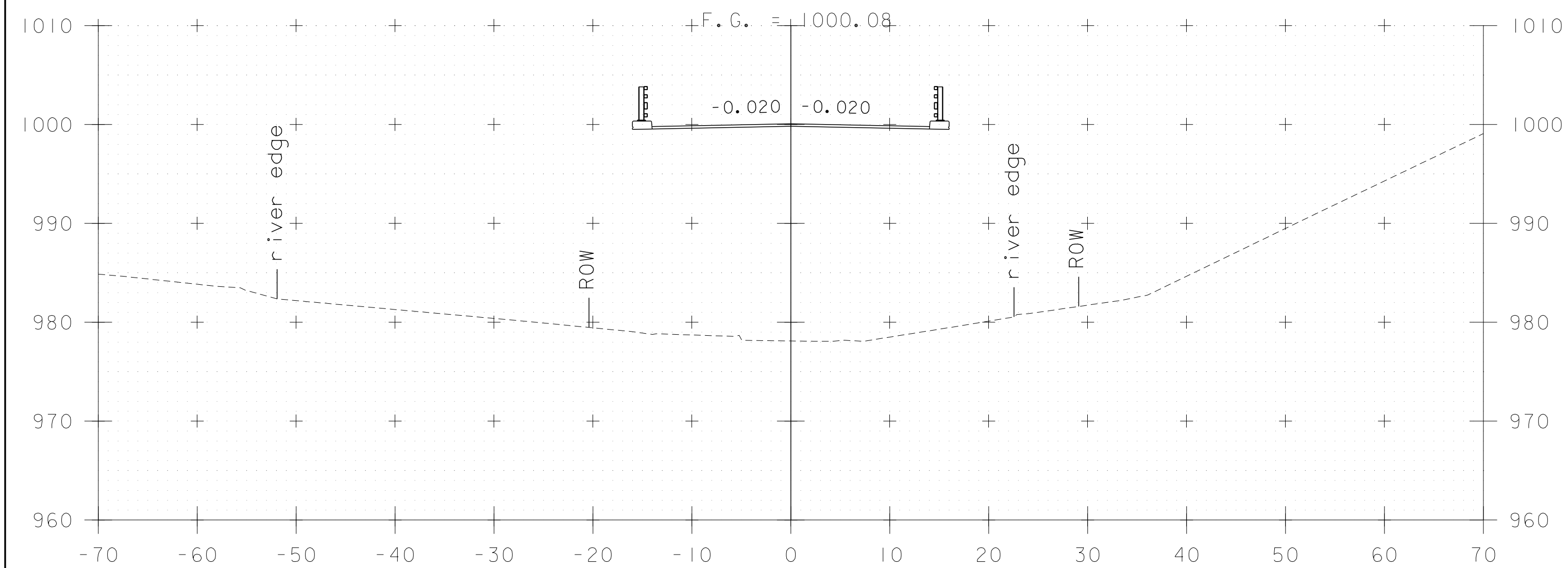
PARSONS BRINCKERHOFF  
650 ELM STREET  
MANCHESTER, NH 03101



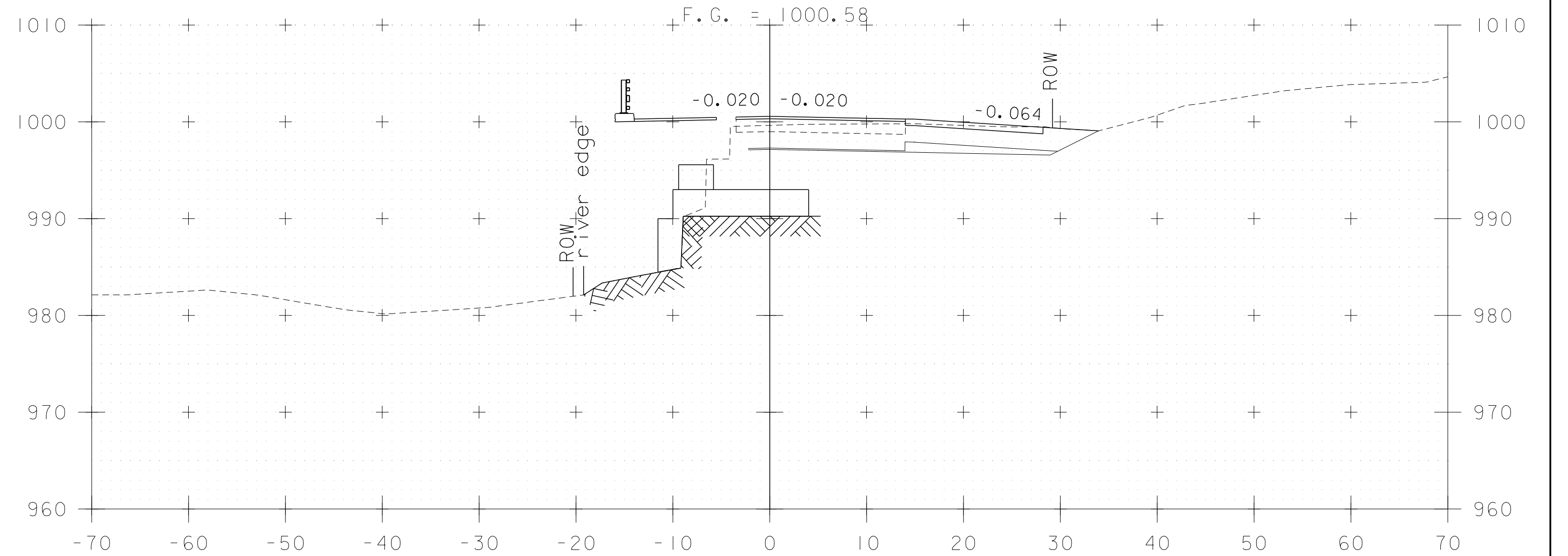
504+25



504+75



504+00



504+50

STA 504+46.35  
END BRIDGE  
RESUME ROADWAY

## MAINLINE CROSS SECTIONS STA. 504+00 - STA. 504+75

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PROJECT NUMBER: BRF 0188 (8)

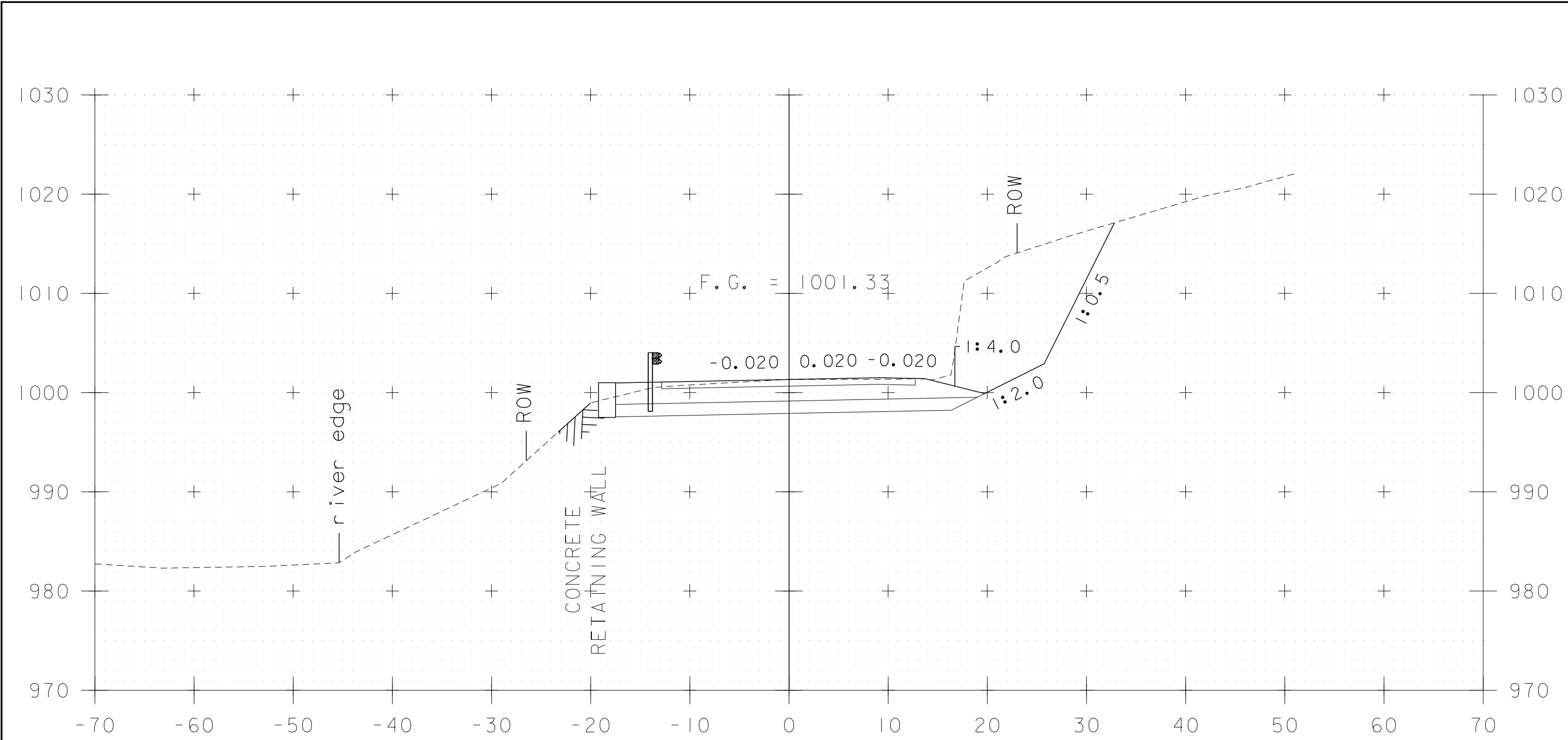


PARSONS BRINCKERHOFF  
650 ELM STREET  
MANCHESTER, NH 03101

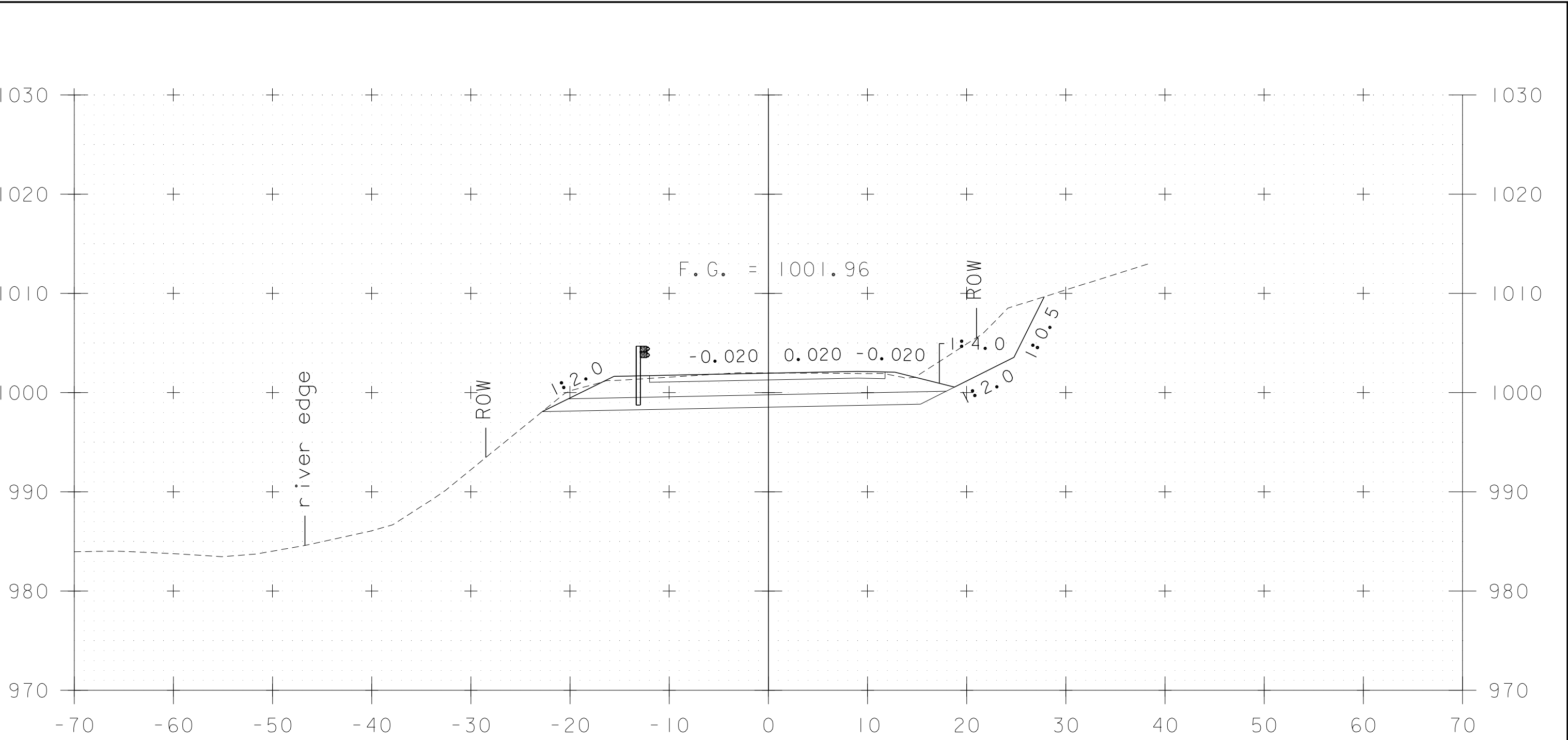
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PROJECT LEADER: G.K. DONINGTON  
DESIGNED BY: C CARNEY  
MAINLINE CROSS SECTIONS (5)

PLOT DATE: 8-DEC-2014  
DRAWN BY: C CARNEY  
CHECKED BY: R BENJAMIN  
SHEET 40 OF 62

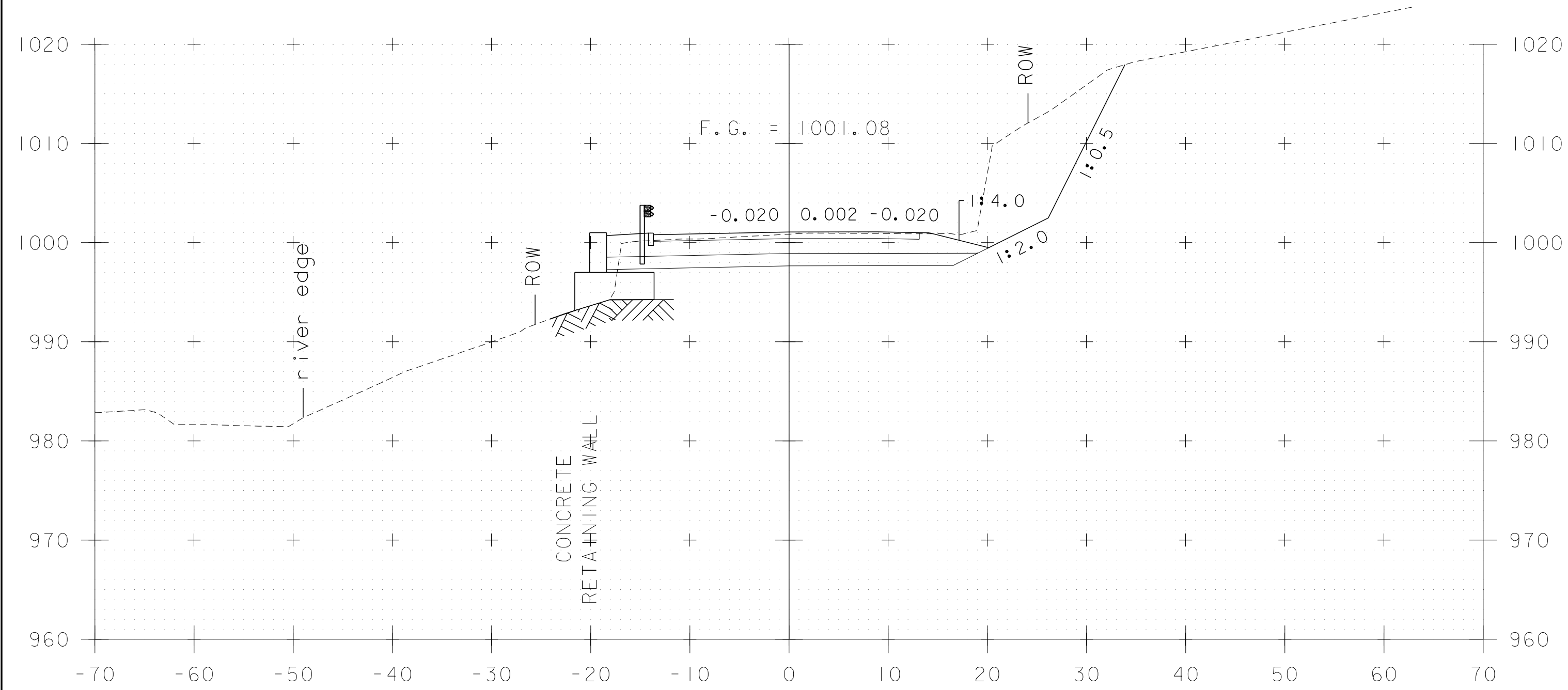




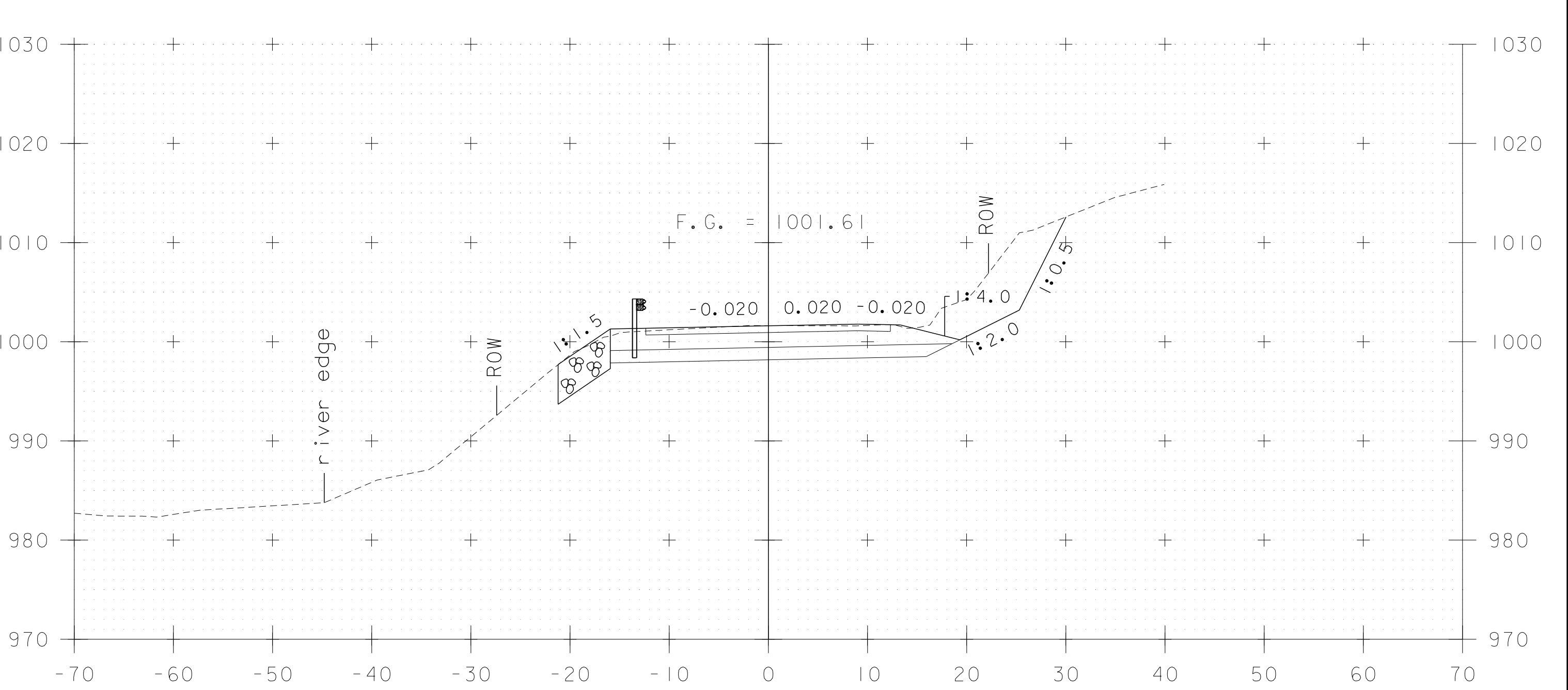
505+25



505+75



505+00



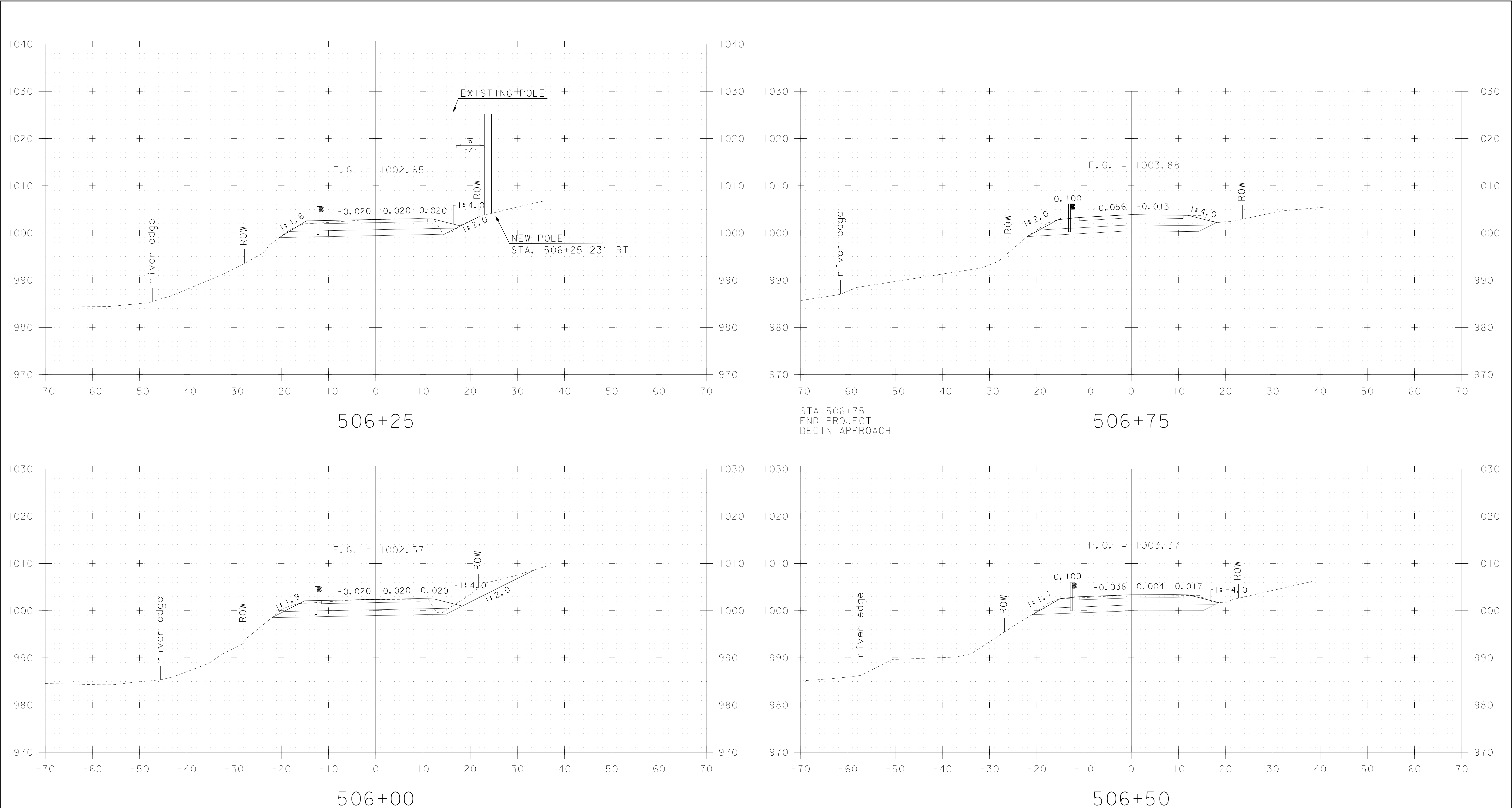
505+50

**MAINLINE CROSS SECTIONS**  
**STA. 505+00 - STA. 505+75**

PROJECT NAME:	LINCOLN
PROJECT NUMBER:	BRF 0188 (8)
FILE NAME:	z10j066xsl.dgn
PROJECT LEADER:	G.K. DONINGTON
DESIGNED BY:	C CARNEY
MAINLINE CROSS SECTIONS (8)	
PLOT DATE:	8-DEC-2014
DRAWN BY:	C CARNEY
CHECKED BY:	R BENJAMIN
SHEET 41	OF 62



PARSONS BRINCKERHOFF  
650 ELM STREET  
MANCHESTER, NH 03101

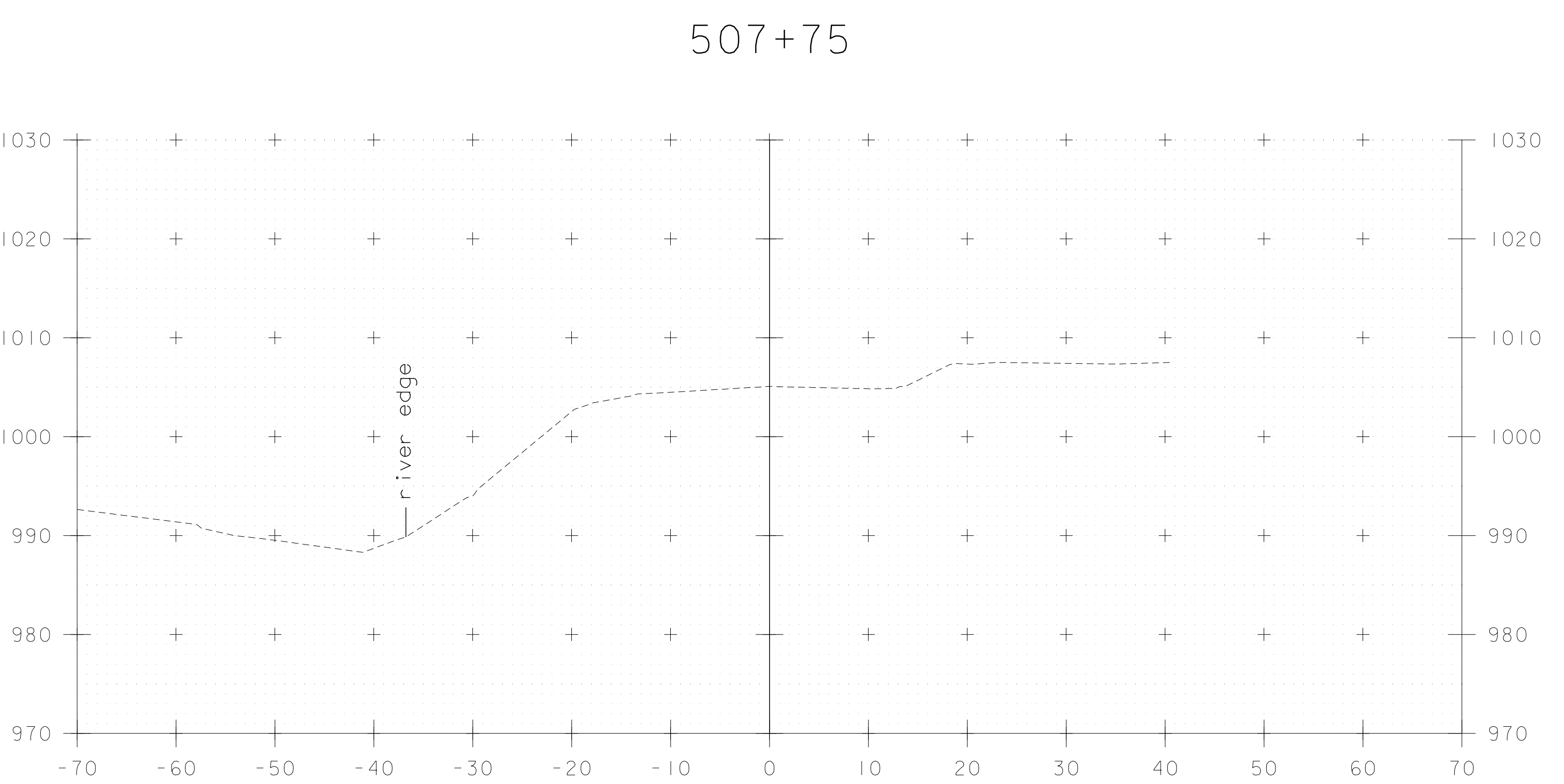
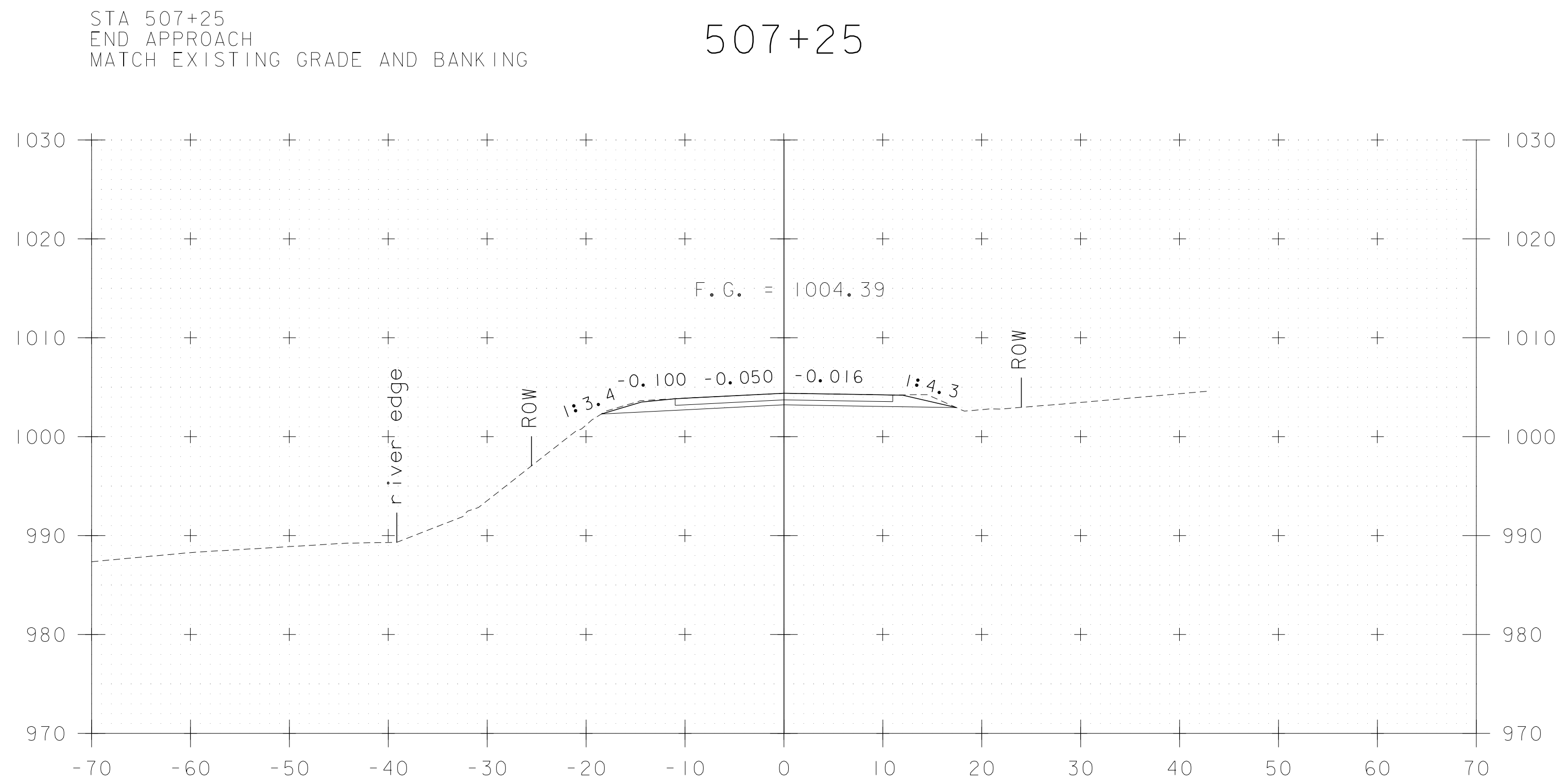
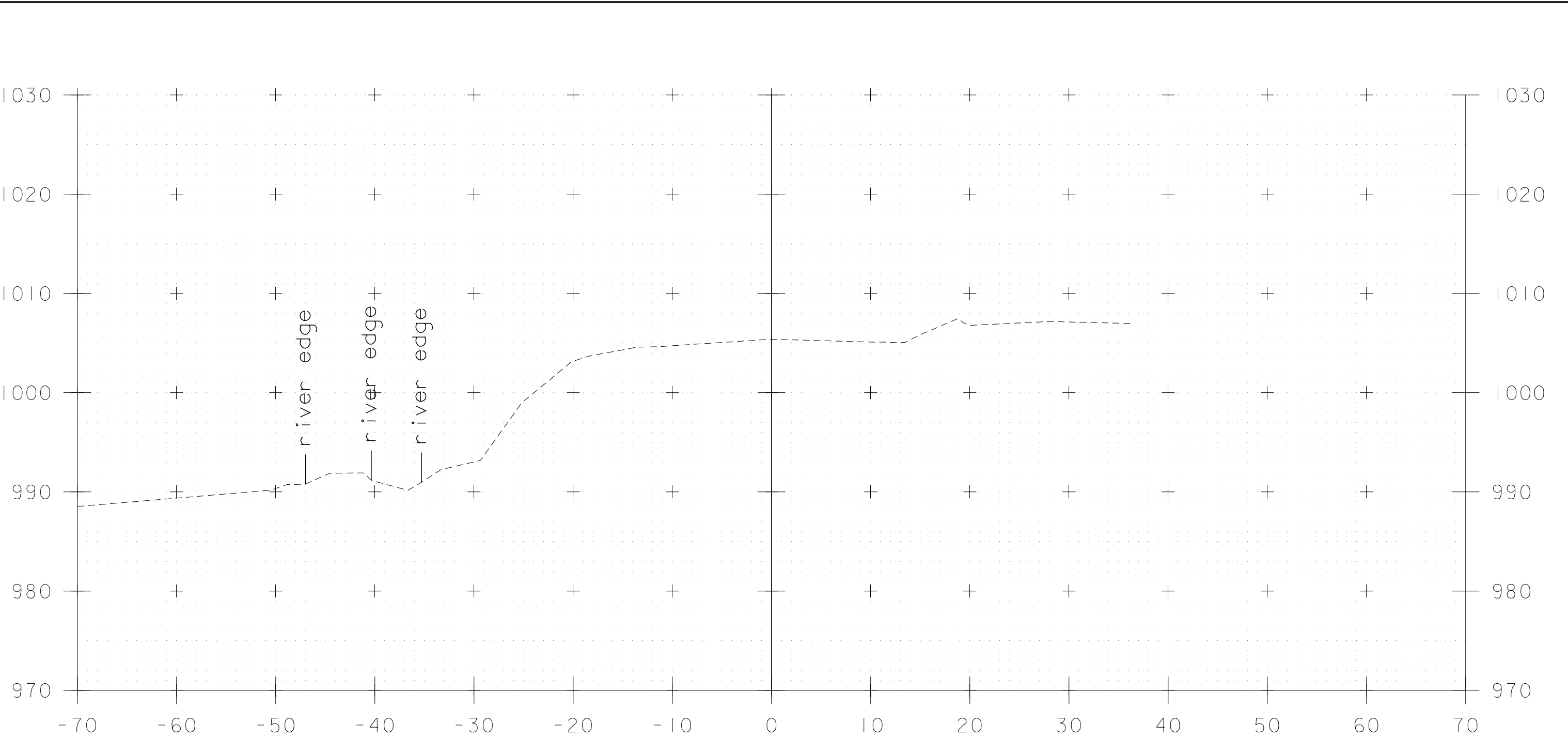
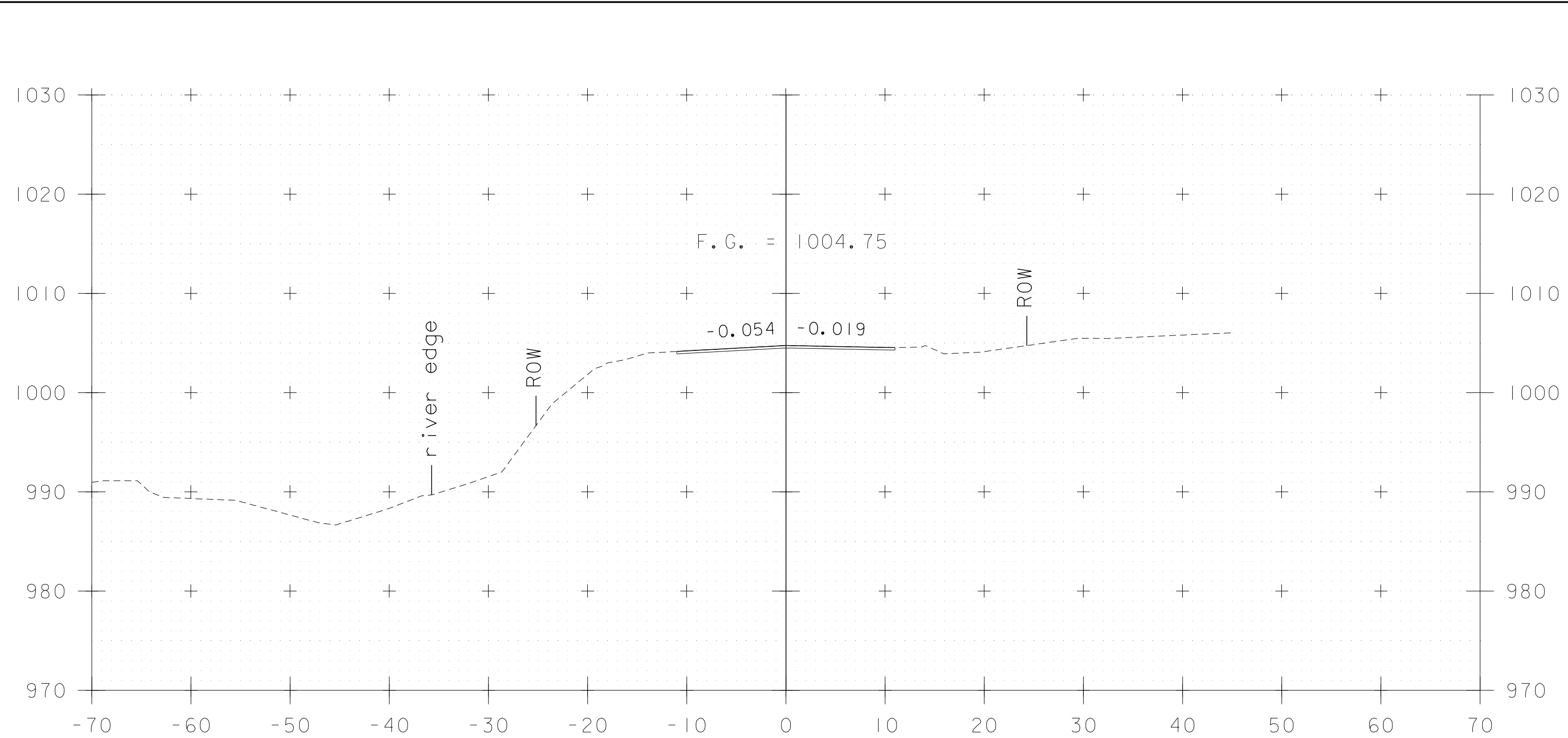


**MAINLINE CROSS SECTIONS**  
**STA. 506+00 - STA. 506+75**

PROJECT NAME:	LINCOLN
PROJECT NUMBER:	BRF 0188 (8)
FILE NAME:	z10j066xsl.dgn
PROJECT LEADER:	G.K. DONINGTON
DESIGNED BY:	C CARNEY
MAINLINE CROSS SECTIONS (7)	
PLOT DATE:	8-DEC-2014
DRAWN BY:	C CARNEY
CHECKED BY:	R BENJAMIN
SHEET	42 OF 62



PARSONS BRINCKERHOFF  
650 ELM STREET  
MANCHESTER, NH 03101

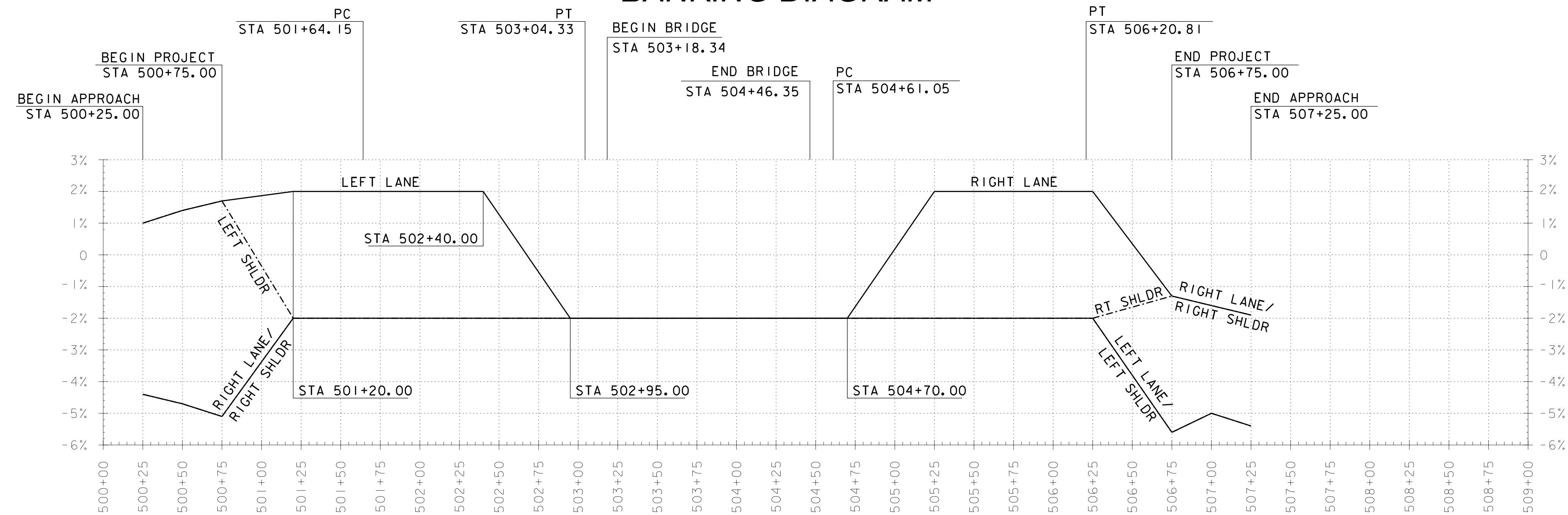


**MAINLINE CROSS SECTIONS**  
**STA. 507+00 - STA. 507+75**

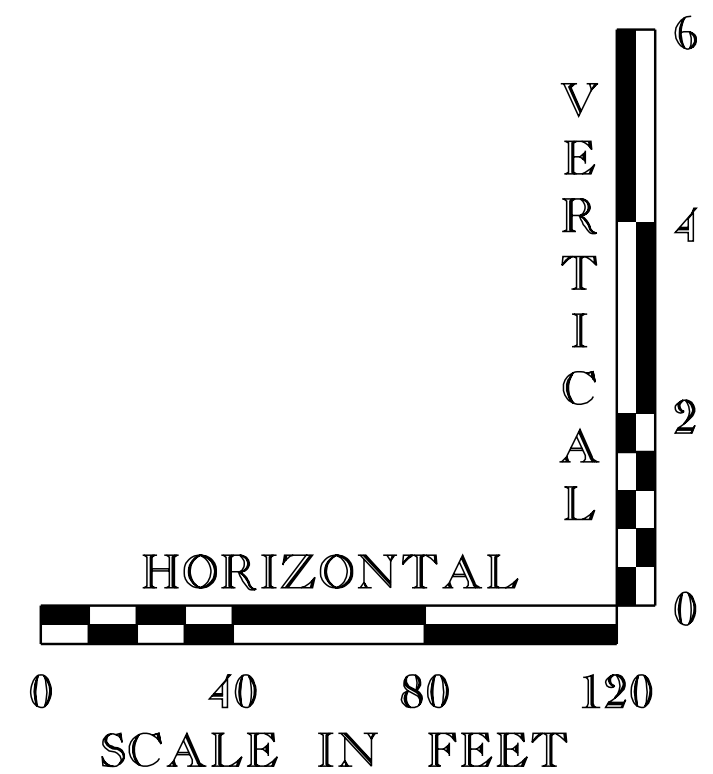
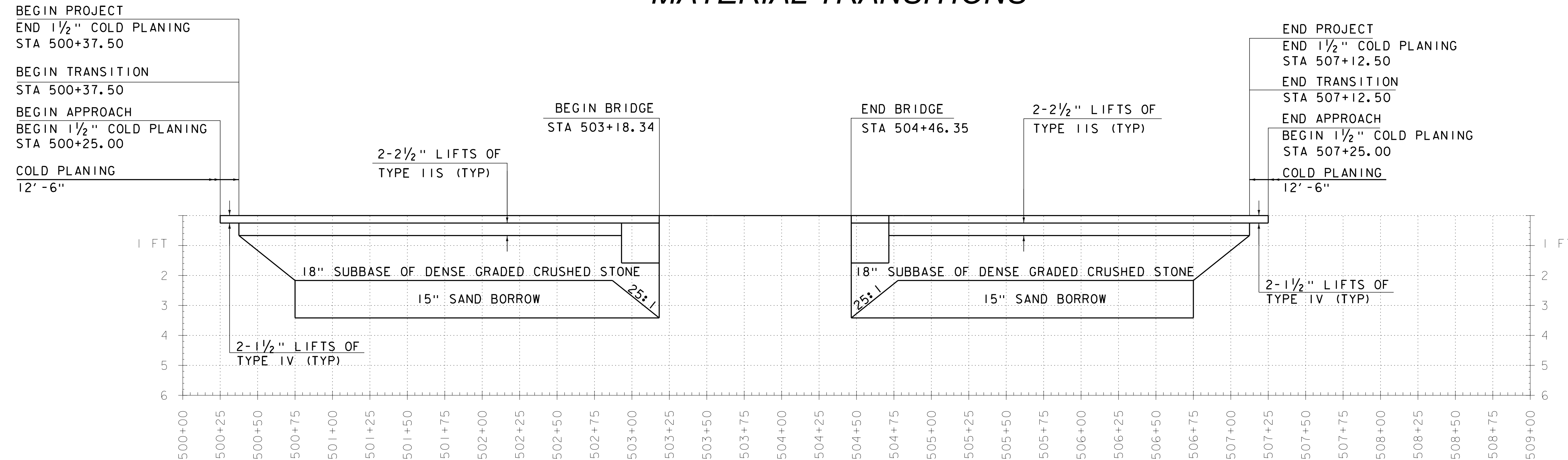
PROJECT NAME:	LINCOLN
PROJECT NUMBER:	BRF 0188 (8)
FILE NAME:	z10j066xsl.dgn
PROJECT LEADER:	G.K. DONINGTON
DESIGNED BY:	C CARNEY
MAINLINE CROSS SECTIONS (8)	
PLOT DATE:	8-DEC-2014
DRAWN BY:	C CARNEY
CHECKED BY:	R BENJAMIN
SHEET 43	OF 62



BANKING DIAGRAM

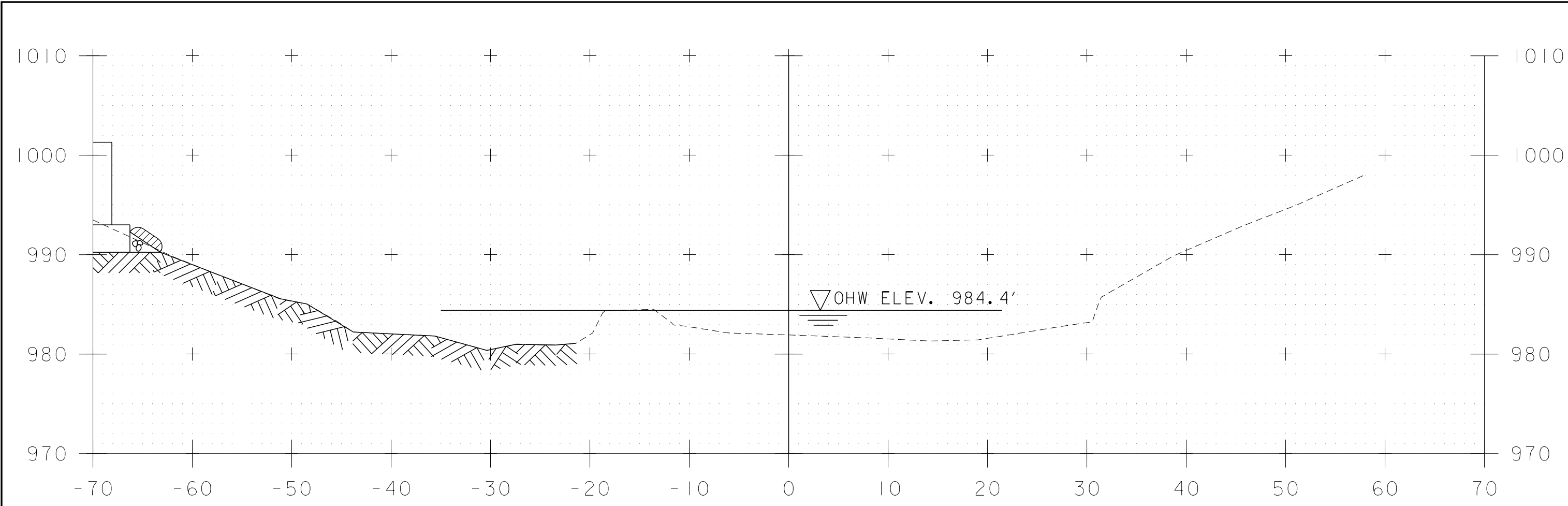


MATERIAL TRANSITIONS

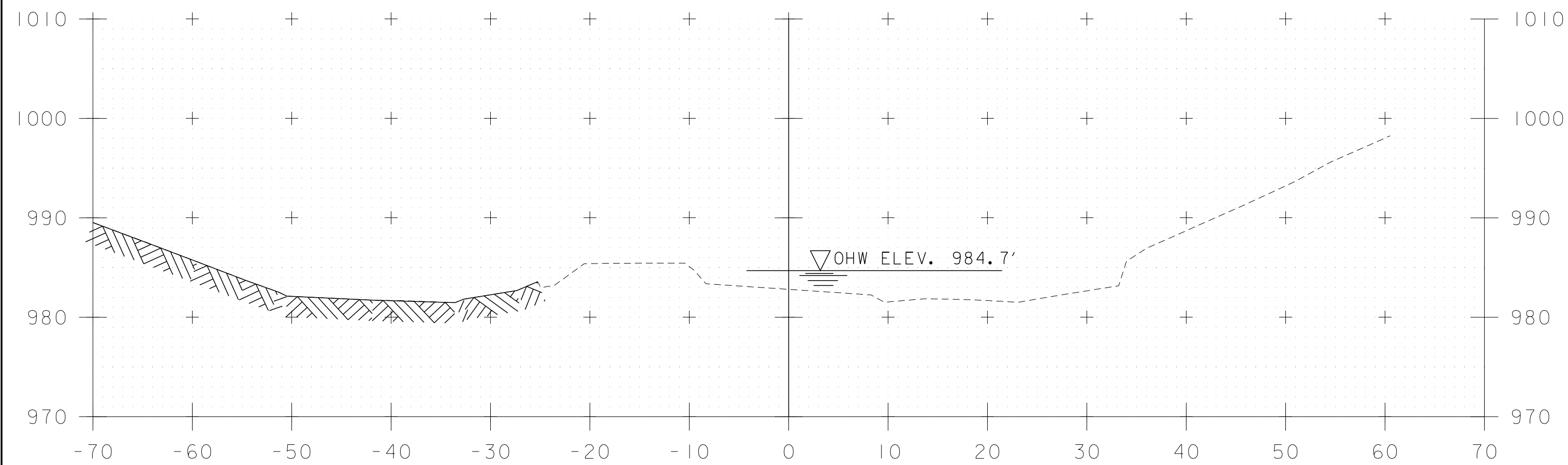


BANKING DIAGRAM & MATERIAL TRANSITION SHEET

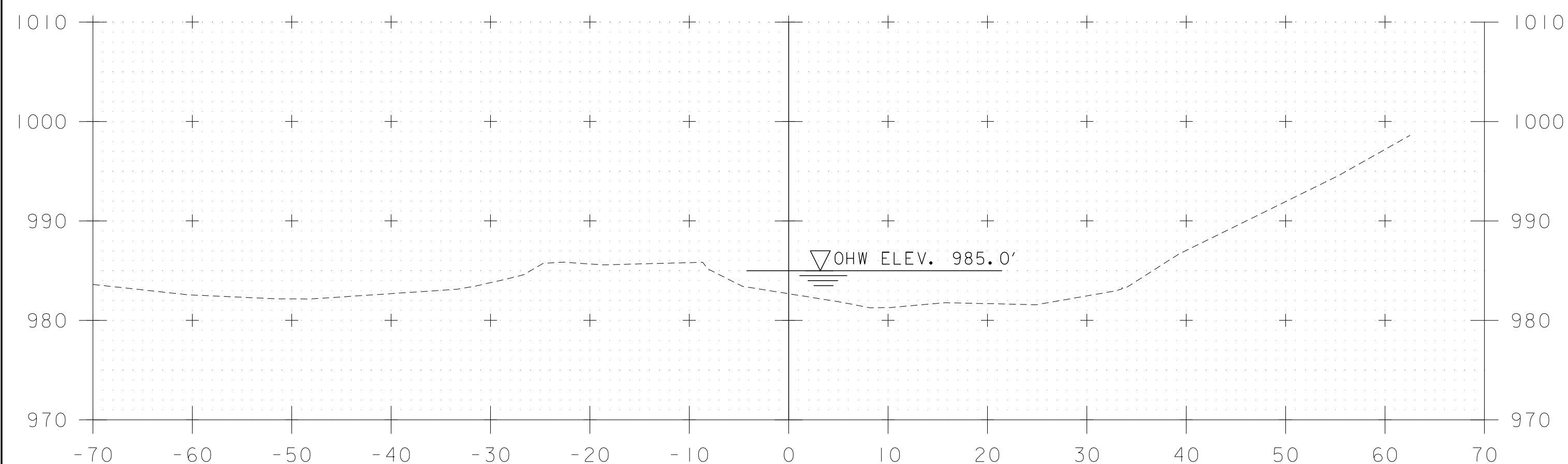
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PROJECT NUMBER:	BRF 0188 (8)
FILE NAME:	z10j066xs2.dgn
PROJECT LEADER:	G.K. DONINGTON
DESIGNED BY:	C CARNEY
BANKING DIAGRAM & MATERIAL TRANSITION	SHEET 44 OF 62
PLOT DATE:	8-DEC-2014
DRAWN BY:	C CARNEY
CHECKED BY:	R BENJAMIN



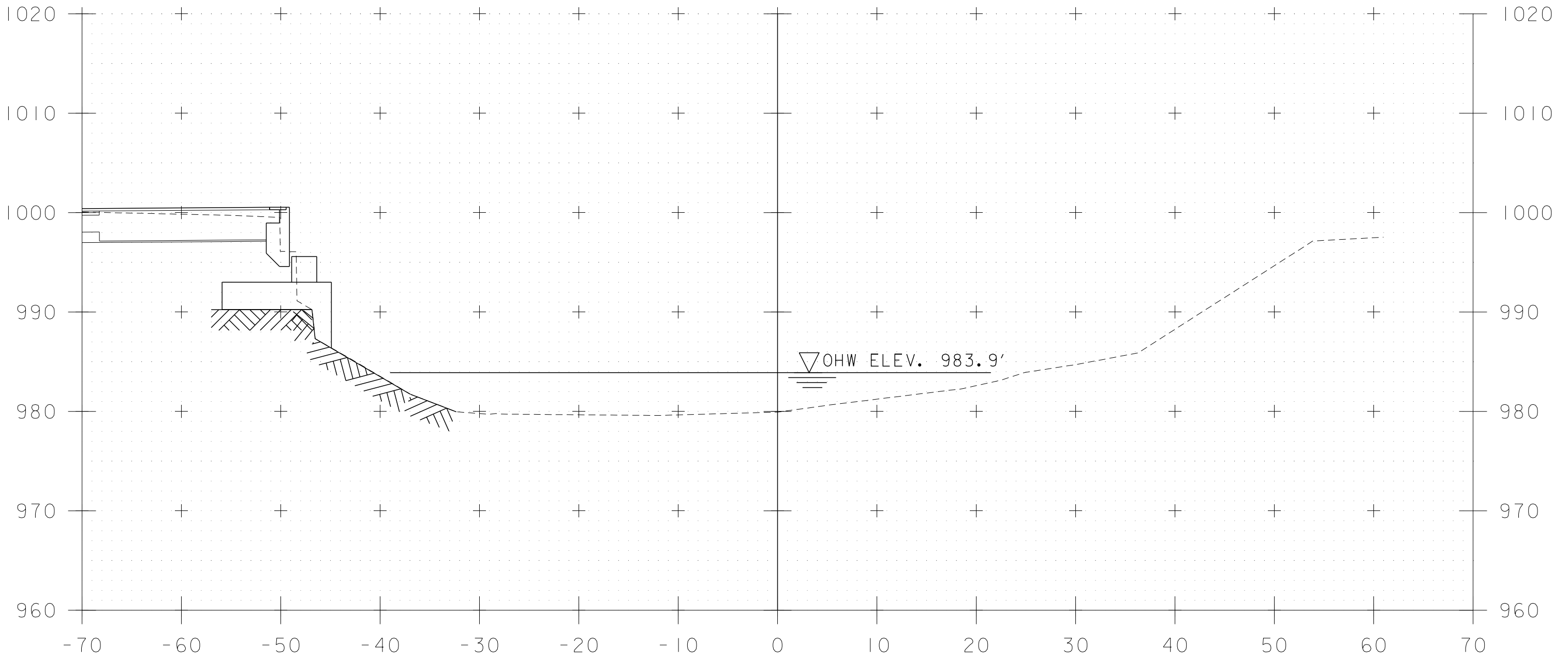
100+50



100+25

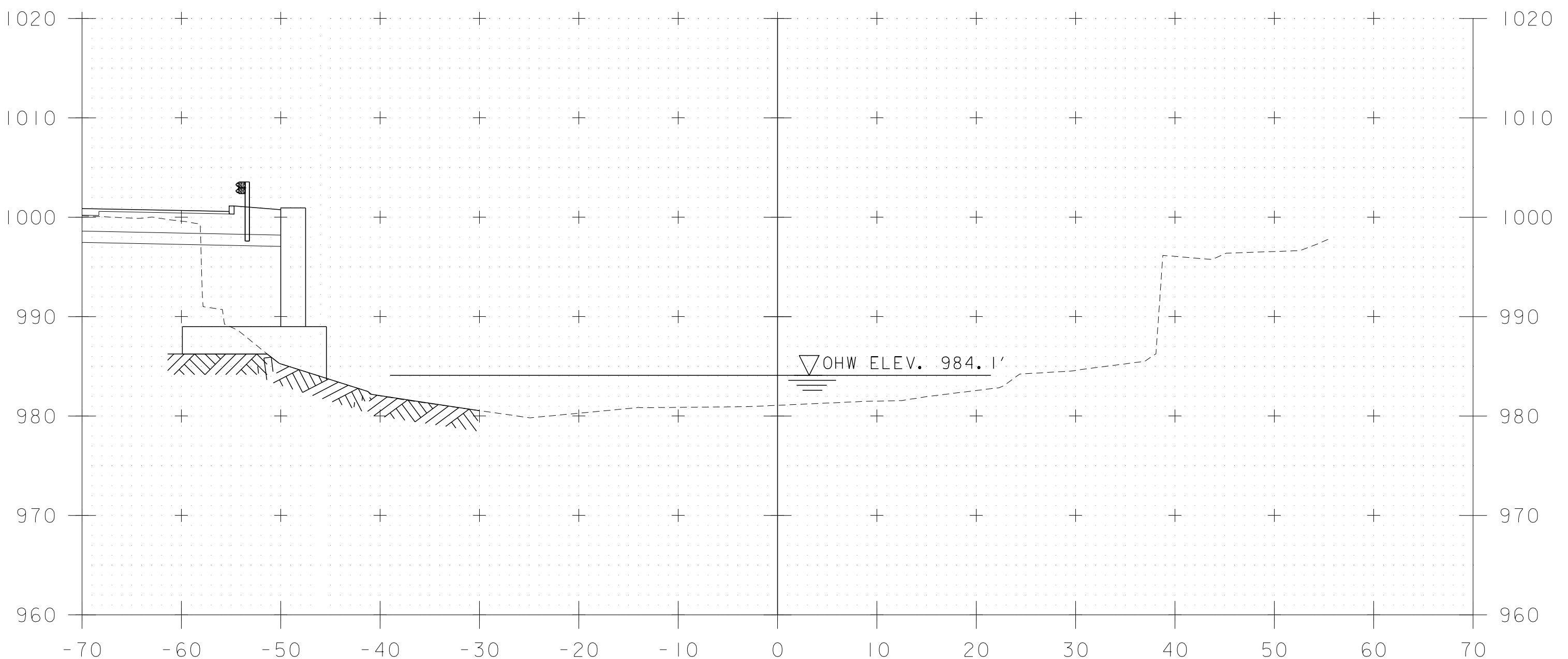


100+00



101+00

STA. 101+00 ABUTMENT #2  
CONTINUE GRANULAR BACKFILL  
STRUCTURE EXCAVATION



100+75

STA. 100+75 ABUTMENT #2  
BEGIN GRANULAR BACKFILL  
STRUCTURE EXCAVATION

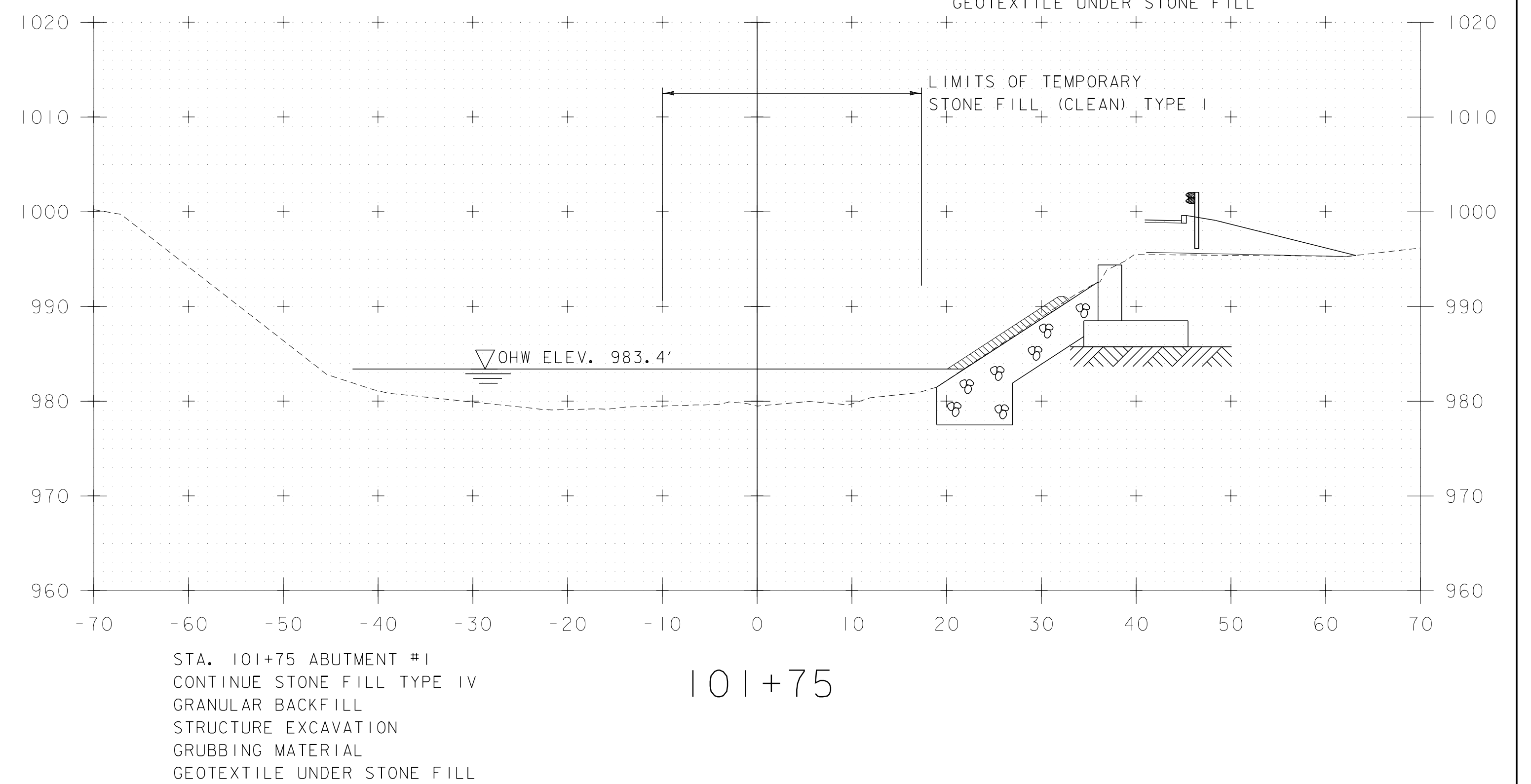
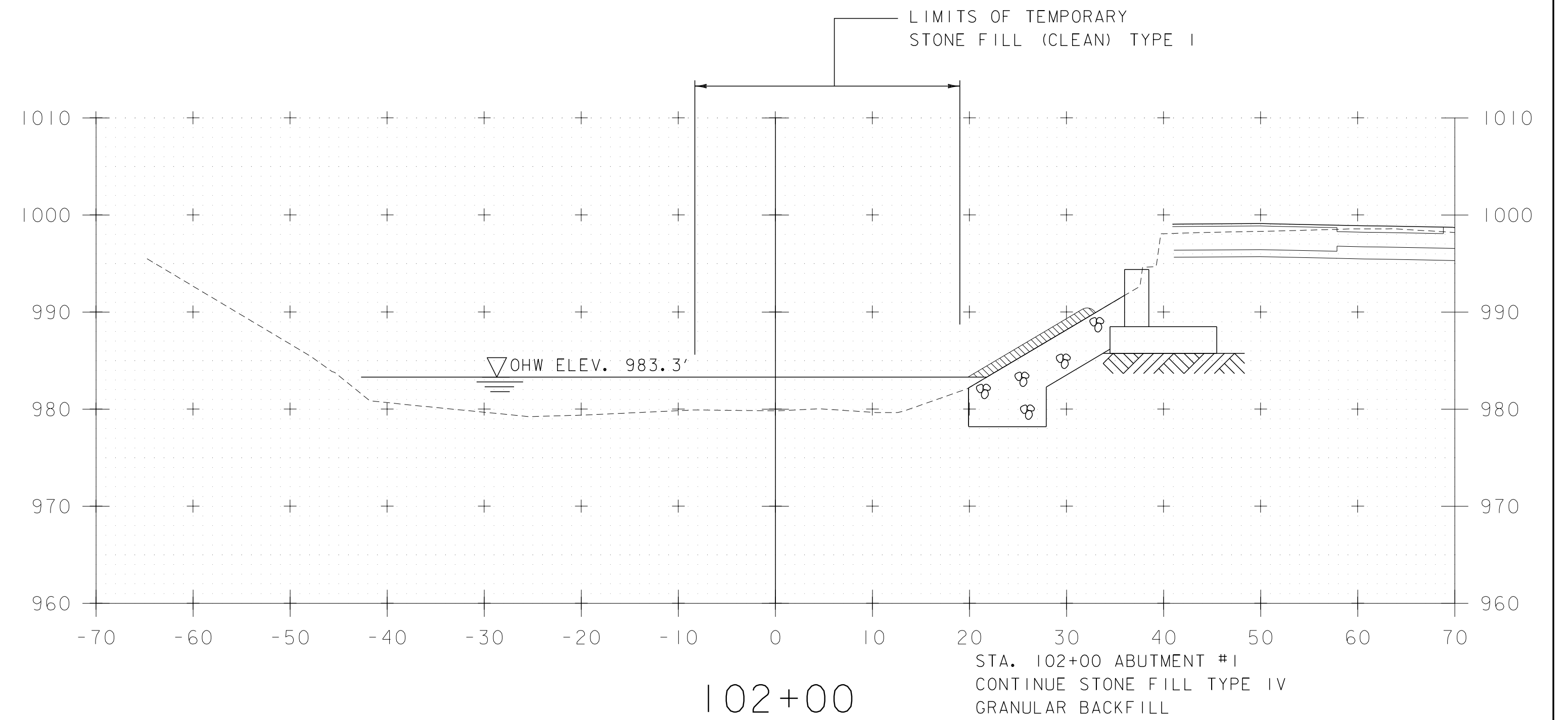
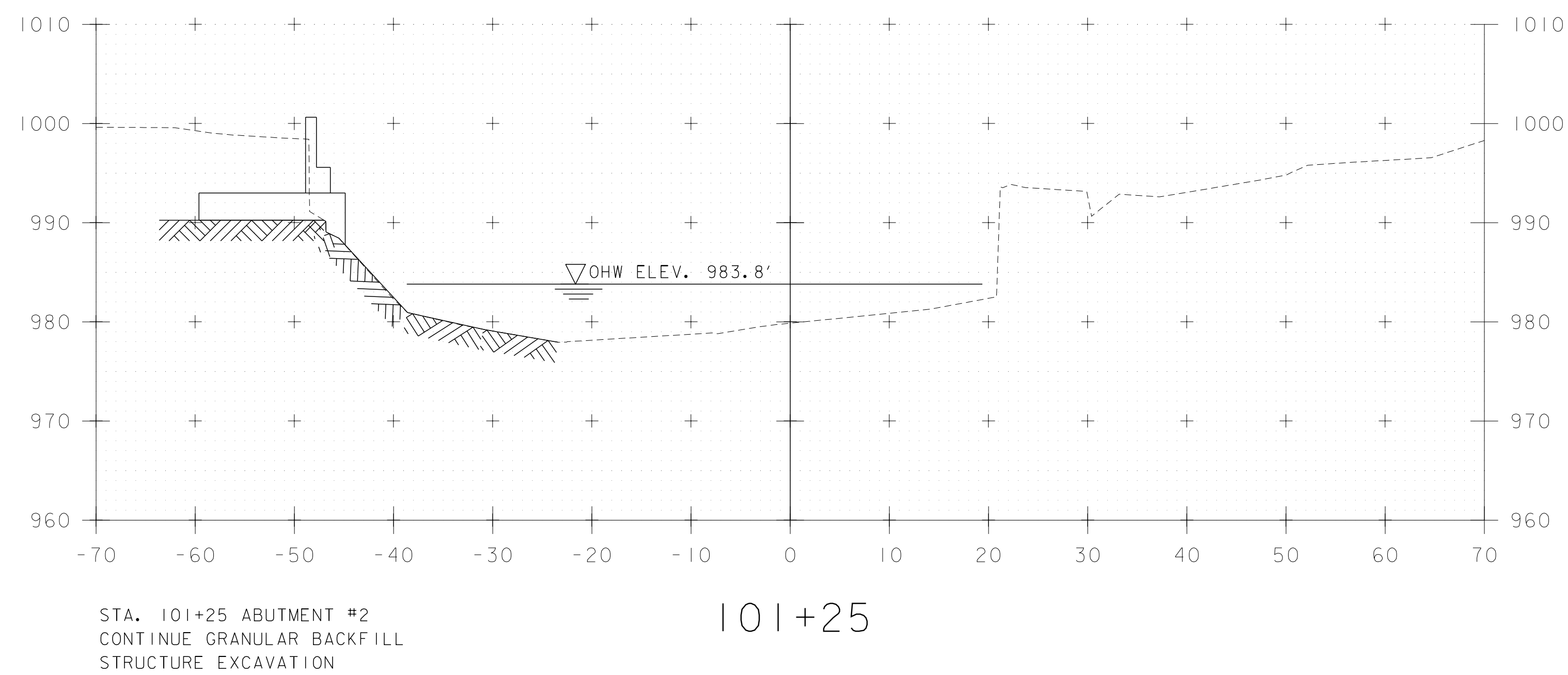
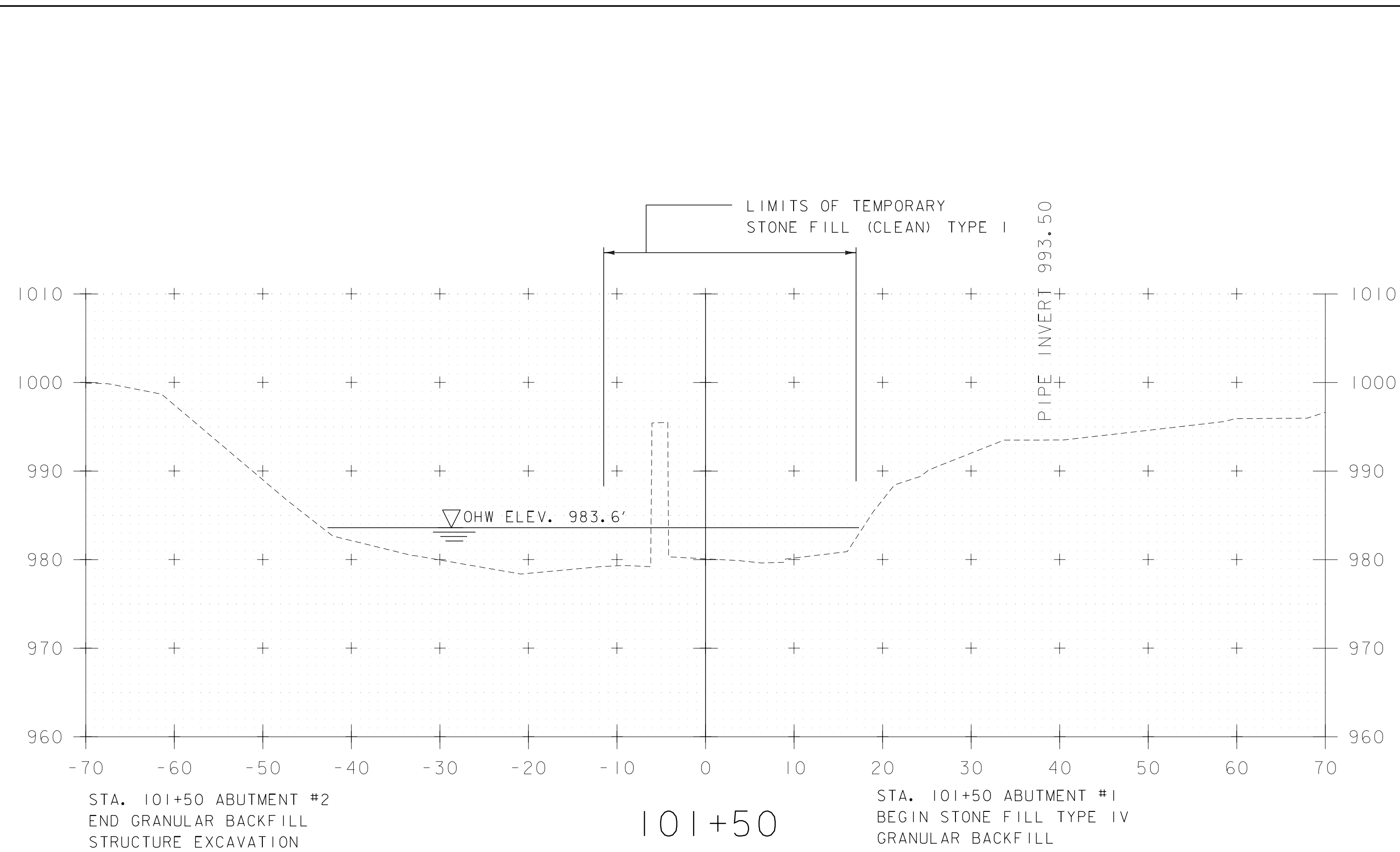
**CHANNEL CROSS SECTIONS**  
**STA. 100+00 - STA. 101+00**

PROJECT NAME: LINCOLN  
PROJECT NUMBER: BRF 0188 (8)



PARSONS BRINCKERHOFF  
650 ELM STREET  
MANCHESTER, NH 03101

FILE NAME: z10j066xsl.dgn  
PROJECT LEADER: G.K. DONINGTON  
DESIGNED BY: C CARNEY  
CHANNEL CROSS SECTIONS (I)  
PLOT DATE: 8-DEC-2014  
DRAWN BY: C CARNEY  
CHECKED BY: R BENJAMIN  
SHEET 45 OF 62

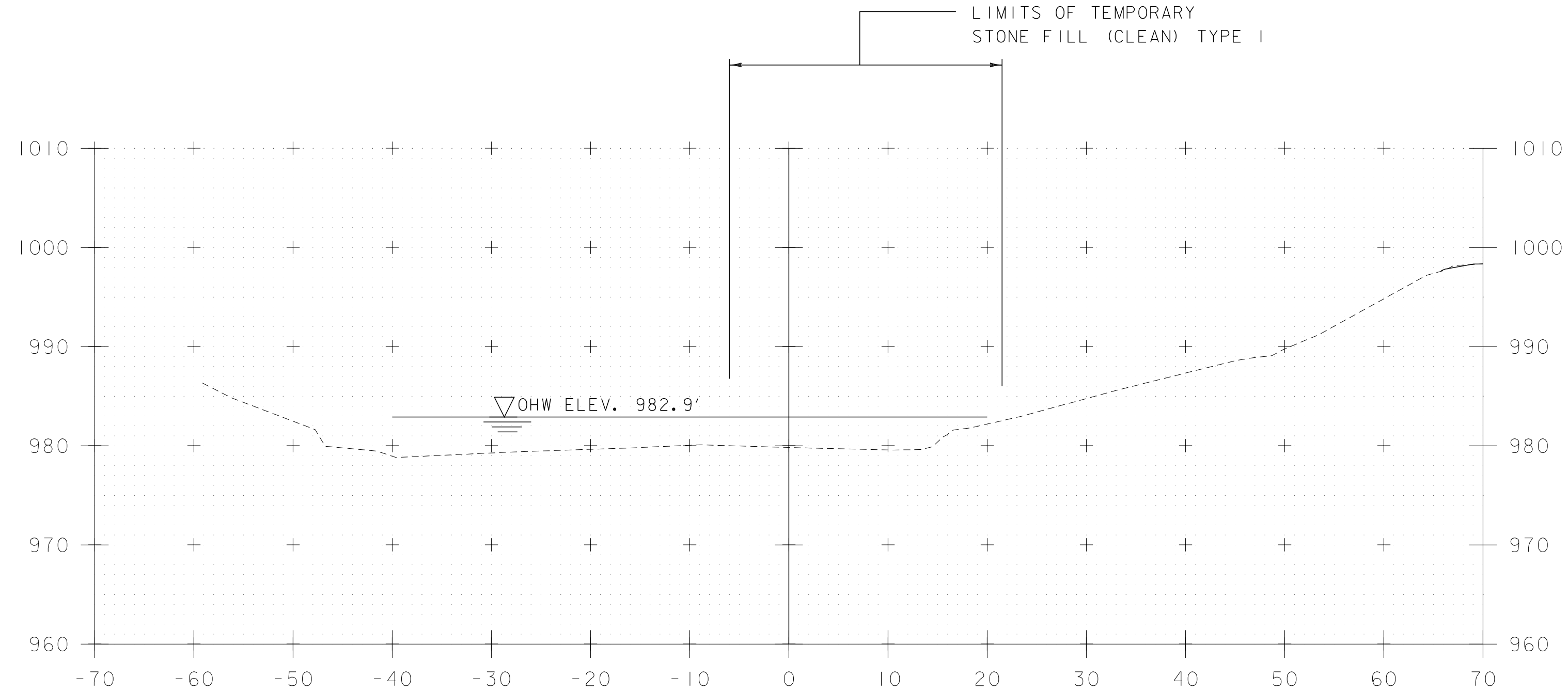


## CHANNEL CROSS SECTIONS

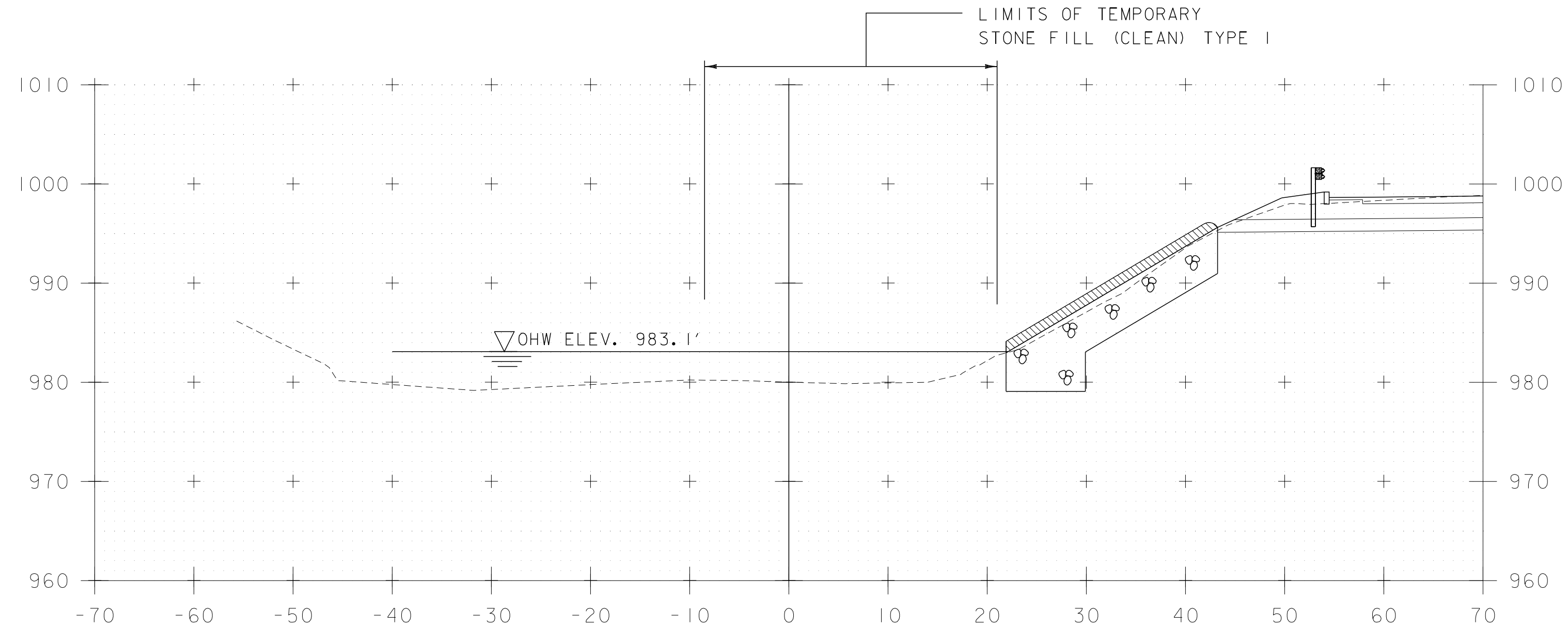
### STA. 100+25 - STA. 102+00

PROJECT NAME:	LINCOLN
PROJECT NUMBER:	BRF 0188 (8)
FILE NAME:	z10j066xsl.dgn
PROJECT LEADER:	G.K. DONINGTON
DESIGNED BY:	C CARNEY
CHANNEL CROSS SECTIONS (2)	
PLOT DATE:	8-DEC-2014
DRAWN BY:	C CARNEY
CHECKED BY:	R BENJAMIN
SHEET	46 OF 62



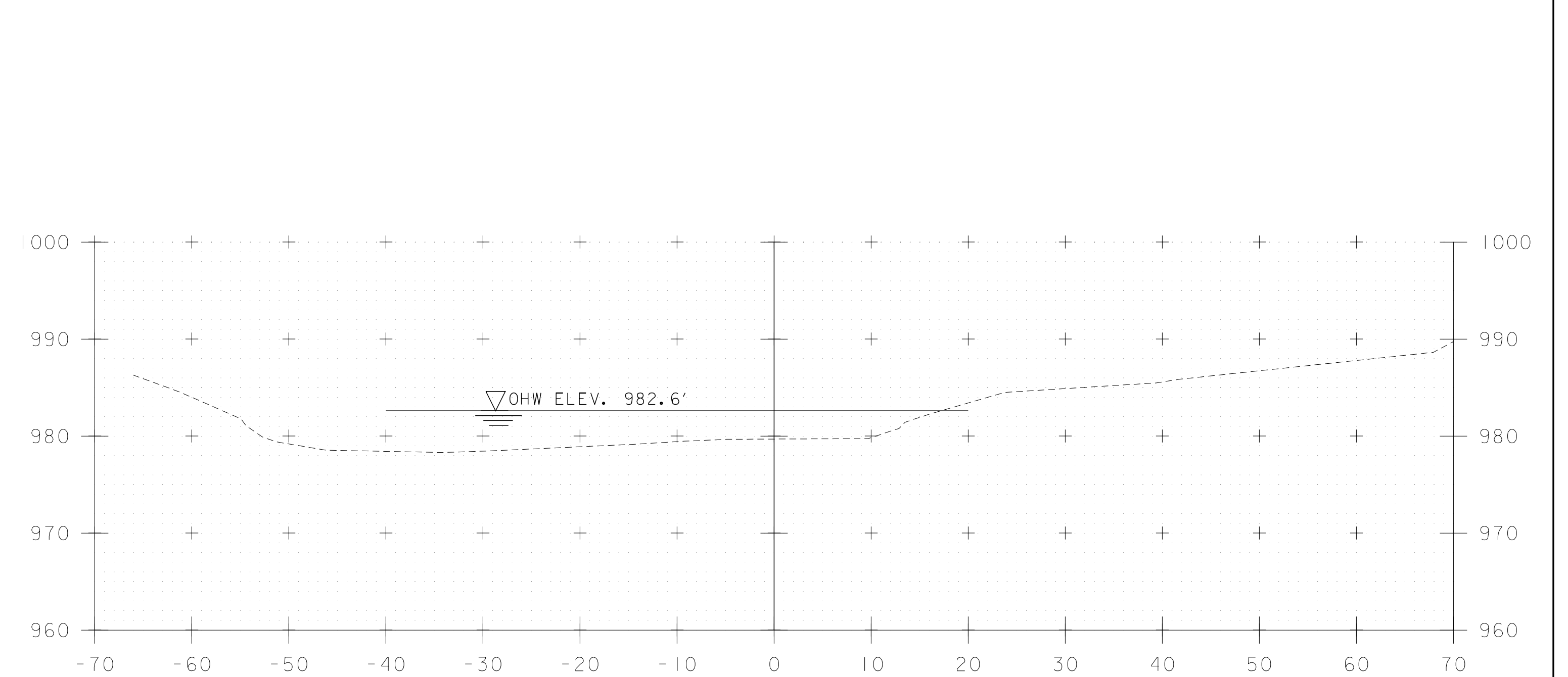


102+50

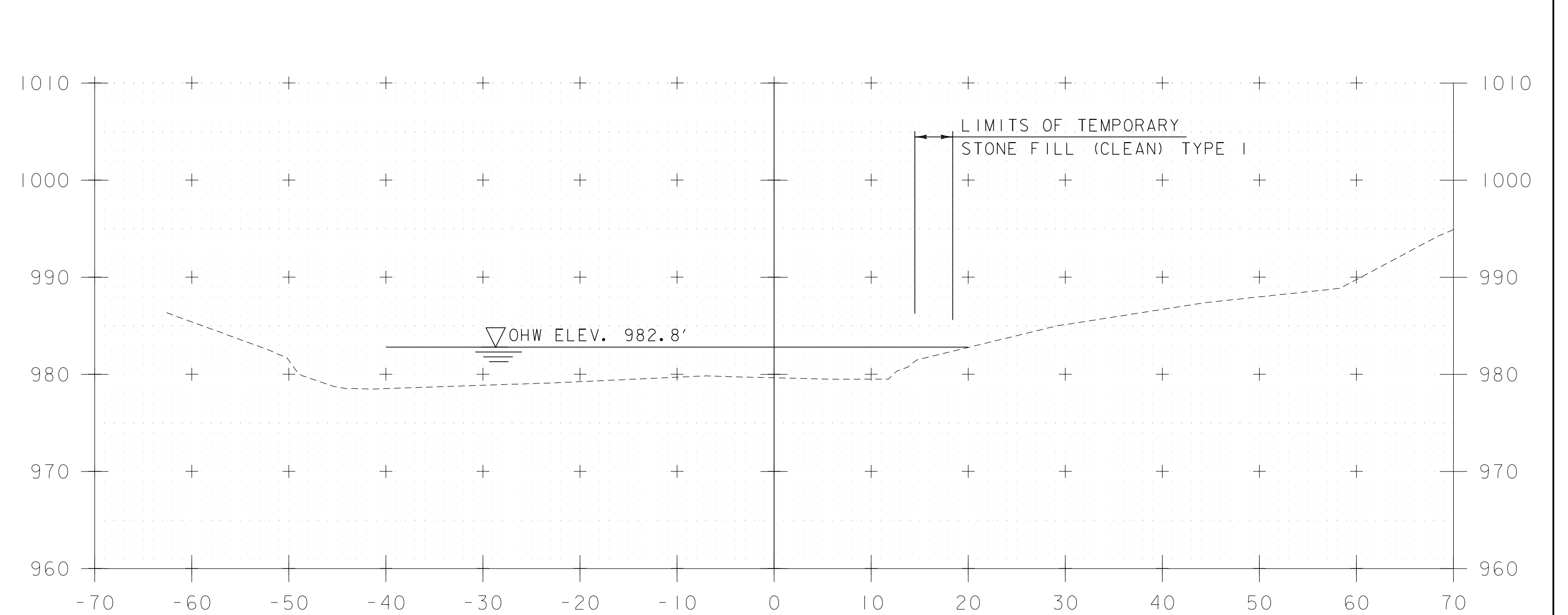


102+25

STA. 102+25 ABUTMENT #1  
END STONE FILL TYPE IV  
GRANULAR BACKFILL  
STRUCTURE EXCAVATION  
GRUBBING MATERIAL  
GEOTEXTILE UNDER STONE FILL



103+00



102+75

## CHANNEL CROSS SECTIONS STA. 102+25 - STA. 103+00

PROJECT NAME:	LINCOLN
PROJECT NUMBER:	BRF 0188 (8)
FILE NAME:	z10j066xsl.dgn
PROJECT LEADER:	G.K. DONINGTON
DESIGNED BY:	C. CARNEY
CHANNEL CROSS SECTIONS (3)	
PLOT DATE:	8-DEC-2014
DRAWN BY:	C. CARNEY
CHECKED BY:	R. BENJAMIN
SHEET	47 OF 62



EPSC PLAN NARRATIVE

1.1 PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE REMOVAL OF A 128’ - 2 SPAN BRIDGE. THE BRIDGE WILL BE REPLACED WITH A PRECAST 120’ SPAN OVER THE NEW HAVEN RIVER, ON NEW FOOTINGS ALONG A SIMILAR ALIGNMENT. THE BRIDGE IS LOCATED IN THE TOWN OF LINCOLN, ON TH #1, APPROXIMATELY 0.5 MILE SOUTH OF THE TOWN CENTER.

NOTE: AREA OF DISTURBANCE INCLUDES LIMITS OF EARTH DISTURBANCE WITHIN THE PROJECT AREA, AS WELL AS WASTE, BORROW, AND OTHER EARTH DISTURBING ACTIVITIES WITHIN OR DIRECTLY ADJACENT TO THE PROJECT LIMITS AS SHOWN ON THE ATTACHED EPSC PLAN.

TOTAL AREA OF DISTURBANCE AS SHOWN ON THE ATTACHED EPSC PLAN IS APPROXIMATELY 1.06 ACRES.

IT IS ANTICIPATED THAT THIS PROJECT WILL LAST ONE CONSTRUCTION SEASON.

1.2 SITE INVENTORY

1.2.1 TOPOGRAPHY

THE TOPOGRAPHY OF THE AREA IS MOSTLY WELL ESTABLISHED FOREST WITH OCCASIONAL OPEN AREAS. THERE ARE RESIDENTIAL DWELLINGS ON THE NORTHWEST AND SOUTH WEST PROPERTIES OF THE BRIDGE. THESE PROPERTIES HAVE LAWN AREAS. TOWN HIGHWAY #1 AND A GRAVEL DRIVEWAY ARE WITHIN THE PROJECT SITE. THERE IS EXPOSED LEDGE ON THE SOUTH SIDE OF THE RIVER IN THE VICINITY OF THE ABUTMENTS AND WINGWALLS.

1.2.2 DRAINAGE, WATERWAYS, BODIES OF WATER, AND PROXIMITY TO NATURAL OR MAN-MADE WATER FEATURES

THE NEW HAVEN RIVER IS THE ONLY WATER SOURCE ON THE PROJECT SITE. THE RIVER IS CLASSIFIED AS SEMI-ALLUVIAL, STRAIGHT AND NOT BRAIDED OR UNBRANCHED. THE STREAMBED IS MADE UP PRIMARILY OF COBBLESTONES. THE BANKS ALONG BOTH SIDES OF THE RIVER BOTH UPSTREAM AND DOWNSTREAM ARE HIGH AND APPEAR TO BE STABLE. THE TRIBUTARY AREA AT THE BRIDGE CROSSING IS 28 MILES². THERE ARE TWO CROSS PIPES ON SITE DRAINING FROM THE ROADWAY TO THE RIVER. DUE TO THE NATURE OF THE SURROUNDING TERRAIN THE PROJECT SITE COULD RECEIVE RUNOFF WATER FROM A FEW NEARBY SLOPES.

1.2.3 VEGETATION

THE VEGETATION IN THE PROJECT AREA CONSISTS OF HARDWOOD TREES AND UNDERGROWTH. THE IMPACT TO VEGETATION WILL BE LIMITED TO THAT WHICH IS DIRECTLY AFFECTED BY REPLACEMENT OF THE EXISTING BRIDGE. UPON PROJECT COMPLETION, THE CHANNEL WILL BE ARMORED WITH STONE FILL TYPE IV AS SPECIFIED ON THE PLANS.DISTURBED VEGETATION WILL BE REESTABLISHED WITH STANDARD SEED AND MULCH PRACTICES.

1.2.4 SOILS

ALL SOIL DATA CAME FROM THE U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE:

LE - LIMERICK SILT LOAM (K= 0.37), HIGHLY ERODIBLE

BEC - BERKSHIRE AND MARLOW STONY LOAMS, 12 TO 25 PERCENT SLOPES. (K= 0.28), MODERATELY ERODIBLE

DAB - DUANE FINE SANDY LOAM, 5 TO 12 PERCENT SLOPES (K= 0.20), NOT HIGHLY ERODIBLE

NOTE: K-VALUES GENERALLY INDICATE THE FOLLOWING:  
0.0-0.23 = LOW EROSION POTENTIAL  
0.24-0.36 = MODERATE EROSION POTENTIAL  
0.37 AND HIGHER = HIGH EROSION POTENTIAL

1.2.5 SENSITIVE RESOURCE AREAS

CRITICAL HABITATS: NO  
HISTORICAL OR ARCHEOLOGICAL AREAS: EXISTING DRY LAID STONE FOUNDATIONS TO BE AVOIDED IF POSSIBLE  
PRIME AGRICULTURAL LAND: NO  
THREATENED AND ENDANGERED SPECIES: NO  
WATER RESOURCE: NEW HAVEN RIVER  
WETLANDS: NO

1.3 RISK EVALUATION

THIS PROJECT FALLS UNDER THE JURISDICTION OF GENERAL PERMIT 3-9020 FOR STORMWATER RUNOFF FROM CONSTRUCTION SITES FOR LOW RISK PROJECTS. ANY MODIFICATIONS TO THE PROJECT THAT INCREASE THE RISK TO ENVIRONMENTAL RESOURCES SHALL BE EVALUATED IN ACCORDANCE WITH THE PERMIT REQUIREMENTS. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY ADDITIONAL PERMITTING.

1.4 EROSION PREVENTION AND SEDIMENT CONTROL

THE EROSION CONTROL PLANS ARE MEANT AS A GUIDELINE FOR PREVENTING EROSION AND CONTROLLING SEDIMENT TRANSPORT. THE PRINCIPLES OUTLINED IN THIS NARRATIVE CONSIST OF APPLYING MEASURES THROUGHOUT CONSTRUCTION OF THE PROJECT IN ORDER TO MINIMIZE SEDIMENT TRANSPORT TO THE RECEIVING WATERS. THE MEASURES INCLUDE STABILIZATION AND STRUCTURAL PRACTICES, STORM WATER CONTROLS AND OTHER POLLUTION PREVENTION PRACTICES. THEY HAVE BEEN PROPOSED BY THE DESIGNER AS A BASIS FOR PROTECTING RESOURCES AND WILL NEED TO BE BUILT UPON BASED ON THE SPECIFIC MEANS AND METHODS OF THE CONTRACTOR. REFER TO THE LOW RISK SITE HANDBOOK AND APPROPRIATE DETAIL SHEETS FOR SPECIFIC GUIDANCE AND CONSTRUCTION DETAILING.

ALL MEASURES SHALL BE REGULARLY MAINTAINED AND SHALL BE CHECKED FOR SEDIMENT BUILD-UP. SEDIMENT SHALL BE DISPOSED OF AT AN APPROVED SITE WHERE IT WILL NOT BE SUBJECT TO EROSION.

1.4.1 MARK SITE BOUNDARIES

SITE BOUNDARIES AND AREAS CONSTRUCTION EQUIPMENT CAN ACCESS SHALL BE DELINEATED.

PROJECT DEMARCATION FENCING (PDF) SHALL BE USED TO PHYSICALLY MARK SITE BOUNDARIES.

1.4.2 LIMIT DISTURBANCE AREA

PREVENTING INITIAL SOIL EROSION BY MINIMIZING THE EXPOSED AREA IS MUCH MORE EFFECTIVE THAN TREATING ERODED SEDIMENT. EARTH DISTURBANCE CAN BE MINIMIZED THROUGH CONSTRUCTION PHASING BY ONLY OPENING UP EARTH AS NECESSARY. THIS CAN LIMIT THE AREA THAT WILL BE DISTURBED AND EXPOSED TO EROSION. EMPLOY TEMPORARY CONSTRUCTION STABILIZATION PRACTICES IN INCREMENTAL STAGES AS PHASES CHANGE. FOR PROJECTS WHICH FALL UNDER THE CONSTRUCTION GENERAL PERMIT, ONLY THE ACREAGE LISTED ON THE PERMIT AUTHORIZATION MAY BE EXPOSED AT ANY GIVEN TIME.

MAINTAINING VEGETATED BUFFERS ALONG STREAM BANKS, WETLANDS OR OTHER SENSITIVE AREAS IS A CRUCIAL EROSION AND SEDIMENT CONTROL MEASURE THAT SHOULD BE ESTABLISHED WHEREVER POSSIBLE.

1.4.3 SITE ENTRANCE/EXIT STABILIZATION

TRACKING OF SEDIMENT ONTO PUBLIC HIGHWAYS SHALL BE MINIMIZED TO REDUCE THE POTENTIAL FOR RUNOFF ENTERING RECEIVING WATERS. INSTALLATION SHALL COINCIDE WITH THE CONTRACTOR PROGRESS SCHEDULE.

STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AS PROPOSED ON THE EPSC PLAN AND ANYWHERE EQUIPMENT WILL BE GOING FROM AREAS OF EXPOSED SOILS TO PAVED SURFACES.

1.4.4 INSTALL SEDIMENT BARRIERS

SEDIMENT BARRIERS SHALL BE UTILIZED TO INTERCEPT RUNOFF AND ALLOW SUSPENDE SEDIMENT TO SETTLE OUT. THEY SHALL BE INSTALLED PRIOR TO ANY UP SLOPE WORK.

SILT FENCE WILL BE INSTALLED AS PROPOSED ON THE EPSC PLAN.

1.4.5 DIVERT UPLAND RUNOFF

DIVERSIONARY MEASURES SHALL BE USED TO INTERCEPT RUNOFF FROM ABOVE THE CONSTRUCTION AND DIRECT IT AROUND THE DISTURBED AREA SO THAT CLEAN WATER DOES NOT BECOME MUDDIED WHILE TRAVELING OVER EXPOSED SOILS ON THE CONSTRUCTION SITE.

THE PROJECT AREA IS RELATIVELY FLAT. THERFORE IT IS NOT ANTICIPIATED THAT DIVERSION MEASURES WILL BE NECESSARY.

1.4.6 SLOW DOWN CHANNELIZED RUNOFF

CHECK STRUCTURES SHALL BE UTILIZED TO REDUCE THE VELOCITY, AND THUS THE EROSIIVE POTENTIAL, OF CONCENTRATED FLOW IN CHANNELS.

THE USE OF STONE CHECK DAMS IS NOT ANTICIPATED ON THIS PROJECT.

1.4.7 CONSTRUCT PERMANENT CONTROLS

PERMANENT STORMWATER TREATMENT DEVICES SHALL BE INSTALLED AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH PERMIT CONDITIONS.

THE USE OF PERMANENT STORMWATER TREATMENT DEVICES IS NOT ANTICIPATED FOR THIS PROJECT.

1.4.8 STABILIZE EXPOSED SOILS DURING CONSTRUCTION

ALL AREAS OF DISTURBANCE MUST HAVE TEMPORARY STABILIZATION IN PLACE WITHIN 48 HOURS OF DISTURBANCE OR IN ACCORDANCE WITH THE CONSTRUCTION GENERAL PERMIT 3-9020 AUTHORIZATION.

SURFACE ROUGHENING OF ALL EXPOSED SLOPES, COMBINED WITH TEMPORARY MULCHING, SHALL BE UTILIZED ON A REGULAR BASIS. BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED TO STABILIZE ALL SLOPES STEEPER THAN 1:3.

THE FORECAST OF RAINFALL EVENTS SHALL TRIGGER IMMEDIATE PROTECTION OF EXPOSED SOILS.

1.4.9 WINTER STABILIZATION

VARIOUS MEASURES SPECIFIC TO WINTER MAY BE NECESSARY SHOULD THE PROJECT EXTEND INTO WINTER (OCTOBER 15 THROUGH APRIL 15). REFER TO THE LOW RISK SITE HANDBOOK FOR GUIDANCE.

1.4.10 STABILIZE SOIL AT FINAL GRADE

EXPOSED SOIL MUST BE STABILIZED WITHIN 48 HOURS OF REACHING FINAL GRADE.

SEED, MULCH, FERTILIZER AND LIME SHALL BE USED TO ESTABLISH PERMANENT VEGETATION. FOR SLOPES STEEPER THAN 1:3, BIODEGRADABLE EROSION CONTROL MATTING OR AN EQUIVALENT SHALL BE USED INSTEAD OF MULCH.

1.4.11 DE-WATERING ACTIVITIES

DISCHARGE FROM DEWATERING ACTIVITIES THAT FLOWS OFF OF THE CONSTRUCTION SITE MUST NOT CAUSE OR CONTRIBUTE TO A VIOLATION OF THE VERMONT WATER QUALITY STANDARDS.

DEWATERING IS NOT ANTICIPATED FOR THIS PROJECT. IF DEWATERING IS NECESSARY THE SPECIFIC MEANS FOR TREATMENT OF DISCHARGE SHALL BE PROVIDED BY THE CONTRACTOR.

1.4.12 INSPECT YOUR SITE

INSPECT THE PROJECT SITE BASED ON SPECIAL PROVISION REQUIREMENTS OR CONSTRUCTION GENERAL PERMIT AUTHORIZATION STIPULATIONS.

1.5 SEQUENCE AND STAGING

THIS SECTION WILL BE DEVELOPED BY THE CONTRACTOR USING THE GUIDANCE OUTLINED IN THE VTRANS EPSC PLAN CONTRACTOR CHECKLIST.

1.5.1 OFF-SITE ACTIVITIES

IN ADDITION TO THE CONTRACTOR CHECKLIST ANY ACTIVITIES OUTSIDE THE CONSTRUCTION LIMITS SHALL FOLLOW SUBSECTIONS 105.25- 105.29 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.

PROJECT NAME:	LINCOLN
PROJECT NUMBER:	BRF 0188 (8)
FILE NAME:	z10j066notes.dgn
PROJECT LEADER:	G.K. DONINGTON
DESIGNED BY:	A. STOCKIN
EPSC PLAN NARRATIVE	
PLOT DATE:	8-DEC-2014
DRAWN BY:	P. ARMANO
CHECKED BY:	A. STOCKIN
SHEET	48
OF	62



PARSONS BRINCKERHOFF  
650 ELM STREET  
MANCHESTER, NH 03101



**JACKSON, WILLARD T.**

SOIL INFORMATION

Le  
LIMERICK SILT LOAM  
HYDROLOGIC SOIL-  
GROUP C

BEGIN BRIDGE  
STA 503+18.34

END BRIDGE  
STA 504+46.35

**TRUCHON,  
EVAN M. & LISA R.**

**HARTMAN, ERIC &  
REABER-SPINA, SARAH**

**TRUCHON, EVAN M. & LISA R.**

SOIL INFORMATION

Le  
LIMERICK SILT LOAM  
HYDROLOGIC SOIL-  
GROUP C

**HUTCHINGS, ROY**

LEGEND

- AER E&T — AERIAL ELECTRIC & TELEPHONE  
----- SOIL BOUNDARY  
----- WETLAND BUFFER ZONE  
ARCH — ARCHEOLOGICAL RESOURCES  
— OHW — ORDINARY HIGH WATER

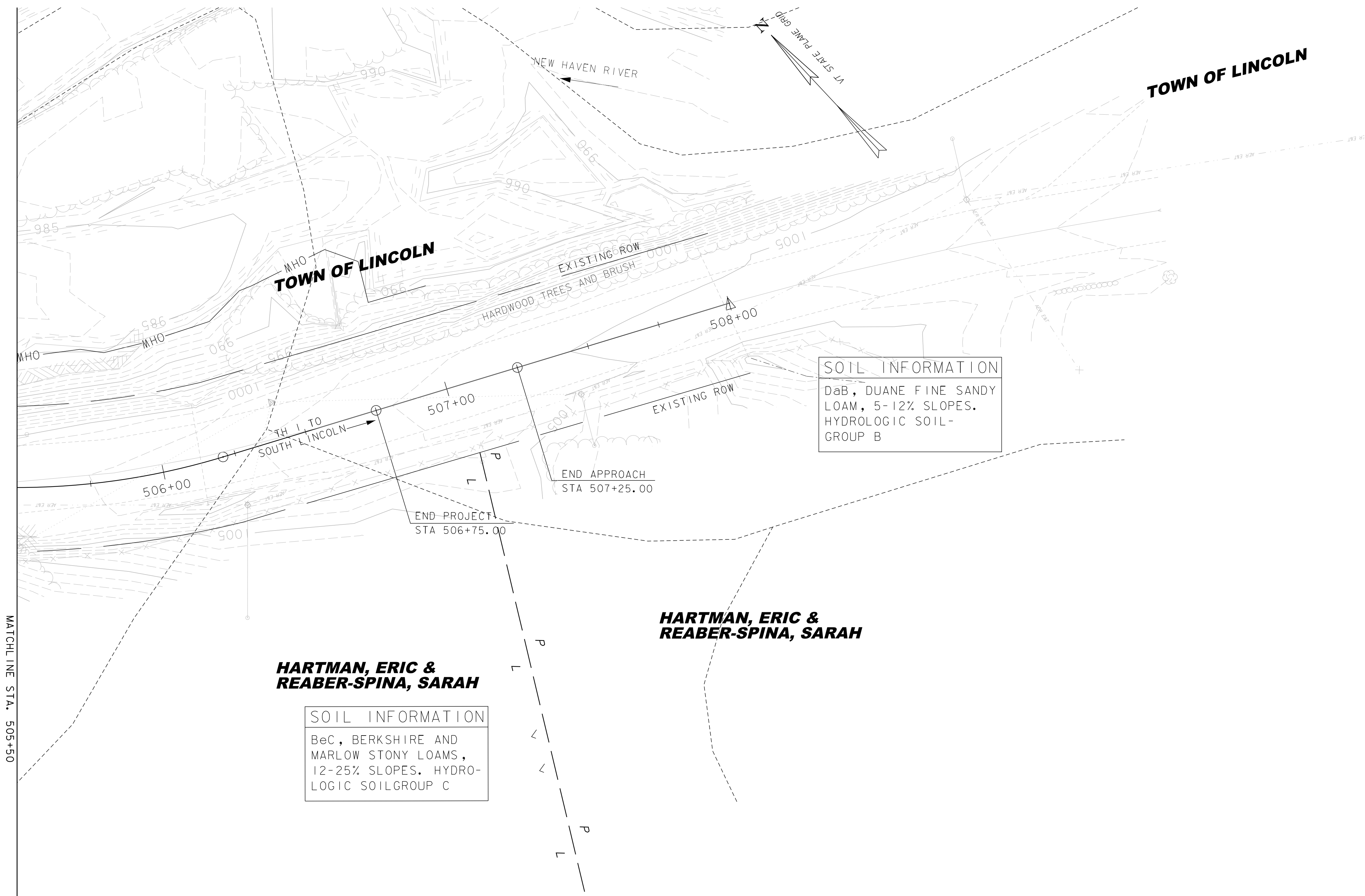
SCALE 1" = 20'-0"  
20 0 20



PARSONS BRINCKERHOFF  
650 ELM STREET  
MANCHESTER, NH 03101

PROJECT NAME: LINCOLN  
PROJECT NUMBER: BRF 0188 (8)

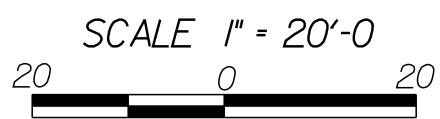
FILE NAME: z10j066exsitebdr.dgn  
PROJECT LEADER: G.K. DONINGTON  
DESIGNED BY: C. CARNEY  
EPSC EXISTING CONDITIONS SITE PLAN (I)  
PLOT DATE: 8-DEC-2014  
DRAWN BY: C. CARNEY  
CHECKED BY: R. BENJAMIN  
SHEET 49 OF 62



SOIL INFORMATION  
DaB, DUANE FINE SANDY  
LOAM, 5-12% SLOPES.  
HYDROLOGIC SOIL-  
GROUP B

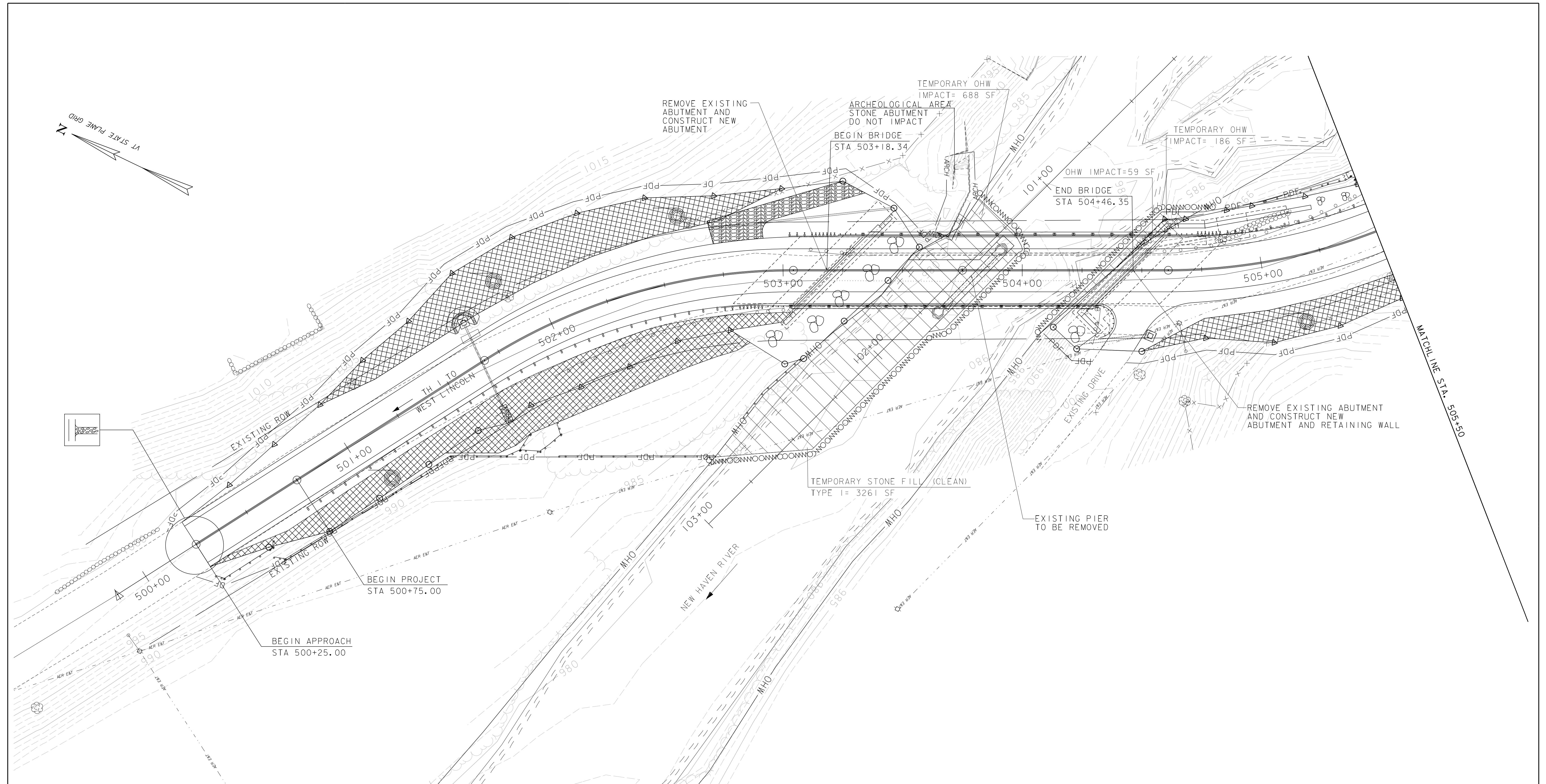
SOIL INFORMATION  
BeC, BERKSHIRE AND  
MARLOW STONY LOAMS,  
12-25% SLOPES. HYDRO-  
LOGIC SOILGROUP C

LEGEND	
	AERIAL ELECTRIC & TELEPHONE
	SOIL BOUNDARY
	WETLAND BUFFER ZONE
	ARCHEOLOGICAL RESOURCES
	ORDINARY HIGH WATER



PROJECT NAME:	LINCOLN
PROJECT NUMBER:	BRF 0188 (8)
FILE NAME:	z10j066exsitebdr.dgn
PROJECT LEADER:	G.K. DONINGTON
DESIGNED BY:	C. CARNEY
EPSC EXISTING CONDITIONS SITE PLAN (2)	
PLOT DATE:	8-DEC-2014
DRAWN BY:	C. CARNEY
CHECKED BY:	R. BENJAMIN
SHEET	50 OF 62





LEGEND

ARCH

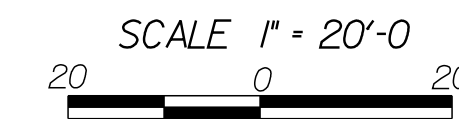
ARCHEOLOGICAL AREA

ROLLED EROSION CONTROL PRODUCT (RECP)

STABILIZED CONSTRUCTION ENTRANCE

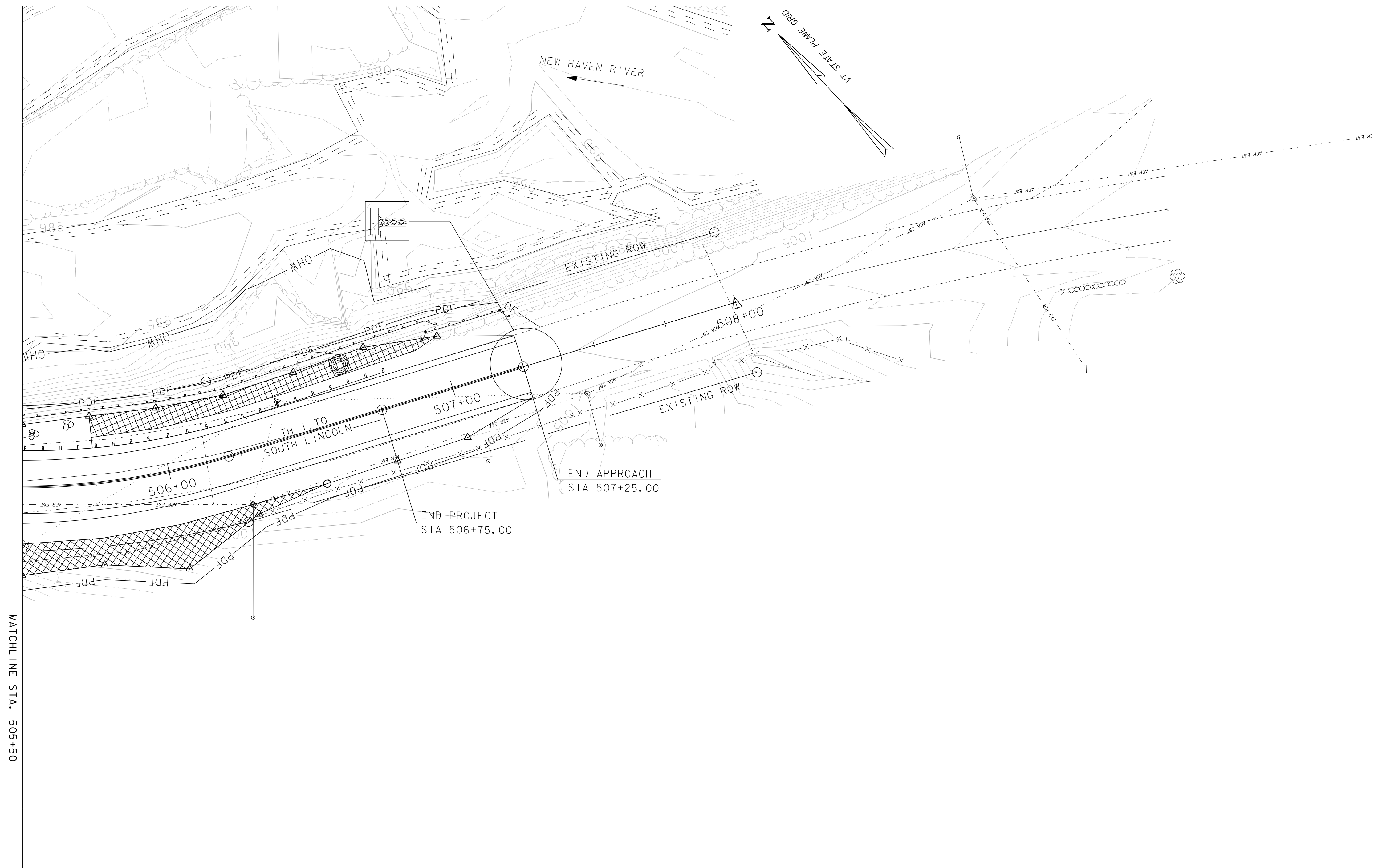
PIPE INLET PROTECTION

CONTOURS SHOWN ARE EXISTING.  
SEE CROSS SECTIONS FOR PROPOSED GRADING.  
SEE SHEET 6 FOR ADDITIONAL EPSC LEGEND SYMBOLLOGY.



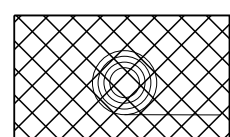
PARSONS BRINCKERHOFF  
650 ELM STREET  
MANCHESTER, NH 03101

PROJECT NAME:	LINCOLN
PROJECT NUMBER:	BRF 0188 (8)
FILE NAME:	z10j066erobdr.dgn
PROJECT LEADER:	G.K. DONINGTON
DESIGNED BY:	C. CARNEY
EPSC CONSTRUCTION CONDITIONS SITE PLAN (I)	SHEET 51 OF 62
PLOT DATE:	8-DEC-2014
DRAWN BY:	C. CARNEY
CHECKED BY:	R. BENJAMIN

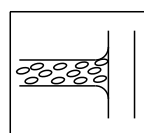


# LEGEND

ARCH ——— ARCHEOLOGICAL AREA



ROLLED EROSION CONTROL  
PRODUCT (RECP)



STABILIZED CONSTRUCTION  
ENTRANCE

CONTOURS SHOWN ARE EXISTING.  
SEE CROSS SECTIONS FOR PROPOSED GRADING.  
SEE SHEET 6 FOR ADDITIONAL EPSC LEGEND SYMBOLOLOGY.

SCALE 1" = 20'-0"



**PARSONS BRINCKERHOFF**  
650 ELM STREET  
MANCHESTER, NH 03101

PROJECT NAME: LINCOLN

PROJECT NUMBER: BRF 0188 (8)

FILE NAME: z10j066erobdr.dgn

PROJECT LEADER: G.K. DONINGTON

DESIGNED BY: C. CARNEY

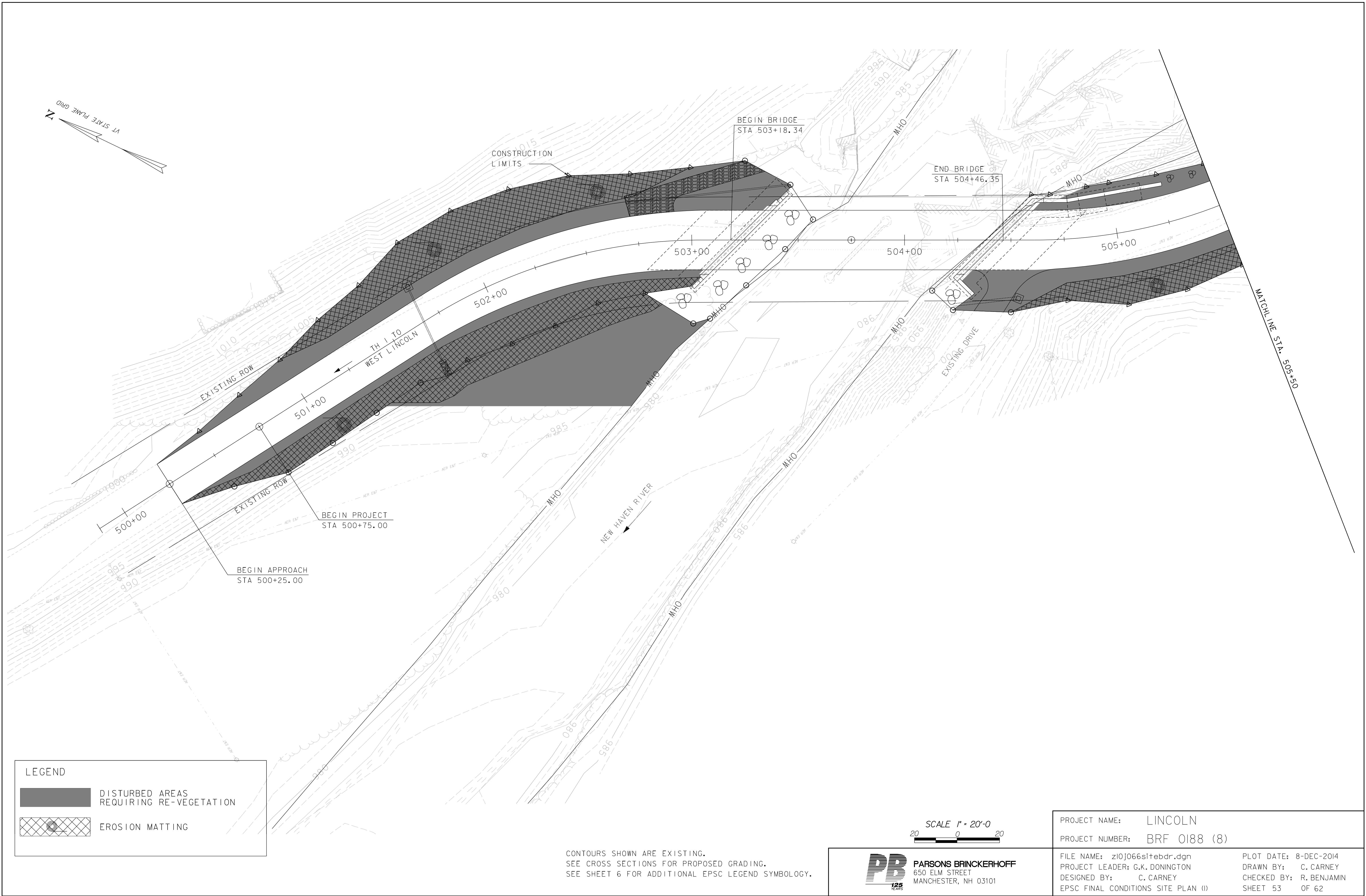
EPSC CONSTRUCTION CONDITIONS SITE PLAN (2)

PLOT DATE: 8-DEC-2014

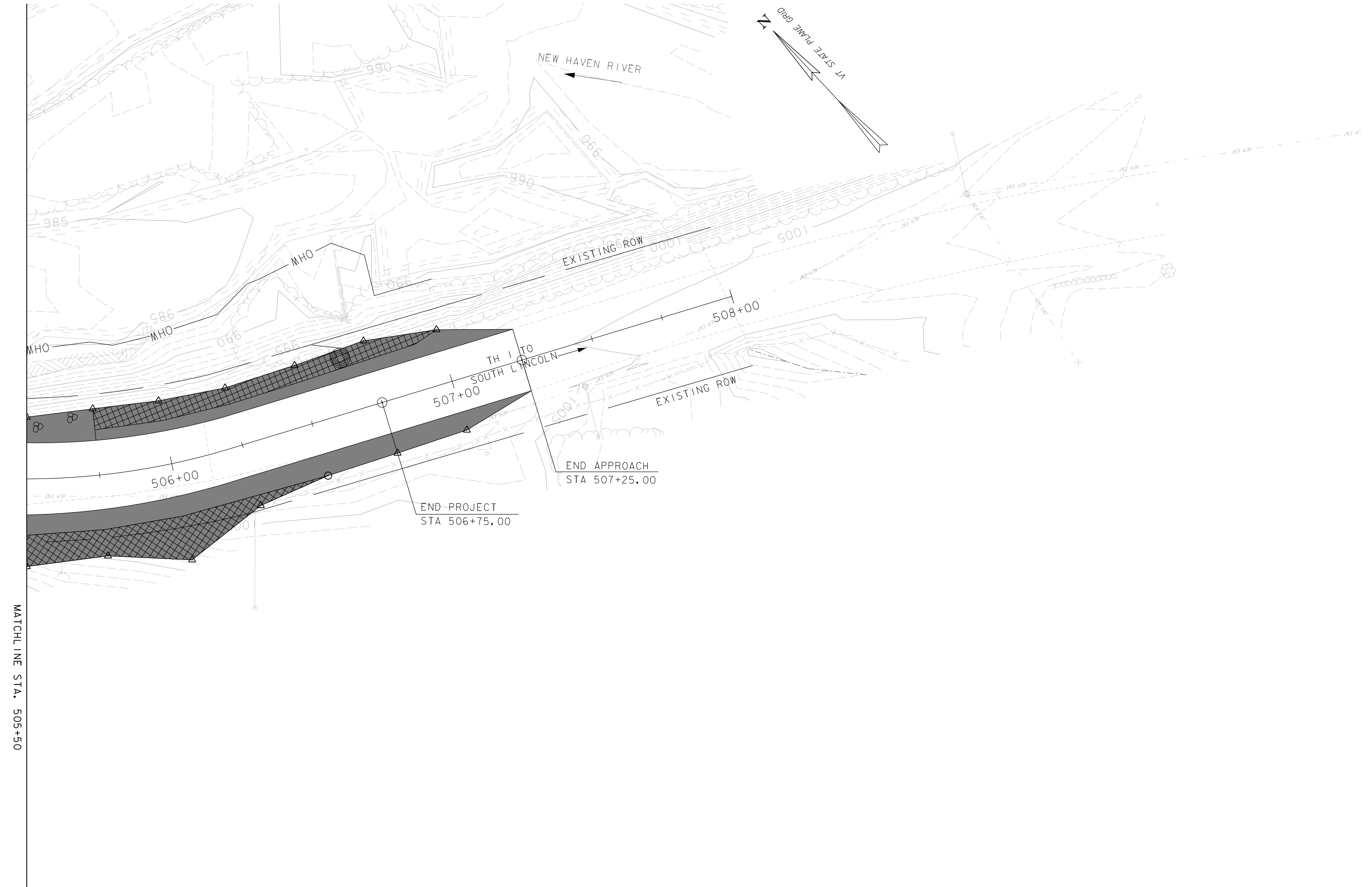
DRAWN BY: C. CARNEY

CHECKED BY: R. BENJAMIN


SHEET 52 OF 62





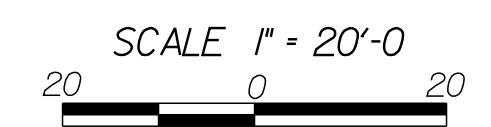


**LEGEND**

 DISTURBED AREAS  
REQUIRING RE-VEGETATION

 EROSION MATTING

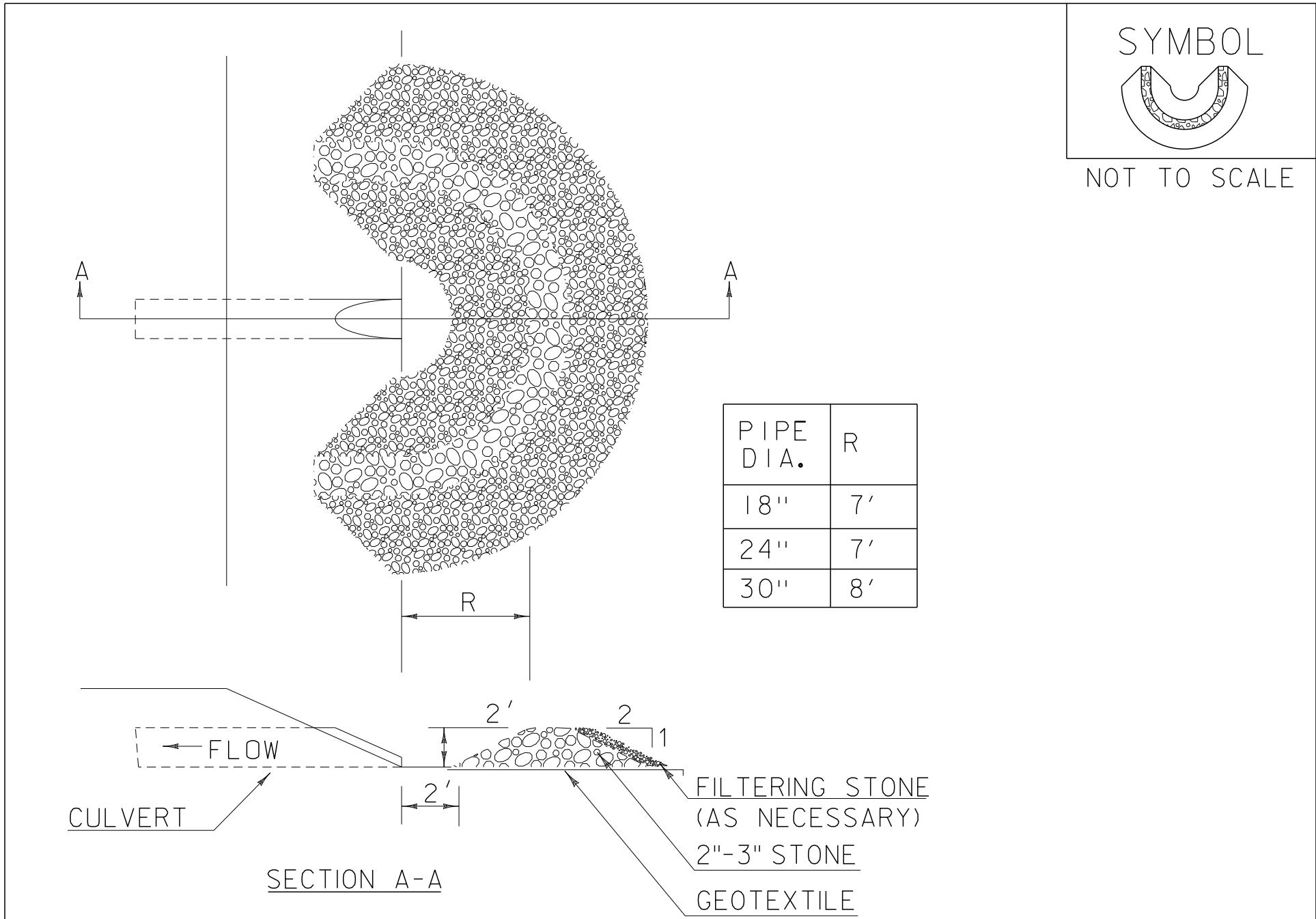
CONTOURS SHOWN ARE EXISTING.  
 SEE CROSS SECTIONS FOR PROPOSED GRADING.  
 SEE SHEET 6 FOR ADDITIONAL EPSC LEGEND SYMBOLOGY.



**PARSONS BRINCKERHOFF**  
 650 ELM STREET  
 MANCHESTER, NH 03101

PROJECT NAME:	LINCOLN	FILE NAME:	z10j066sitebdr.dgn	PLOT DATE:	8-DEC-2014
PROJECT NUMBER:	BRF 0188 (8)	PROJECT LEADER:	G.K. DONINGTON	DRAWN BY:	C. CARNEY
		DESIGNED BY:	C. CARNEY	CHECKED BY:	R. BENJAMIN
		EPSC FINAL CONDITIONS SITE PLAN (2)		SHEET 54	OF 62





CONSTRUCTION SPECIFICATIONS

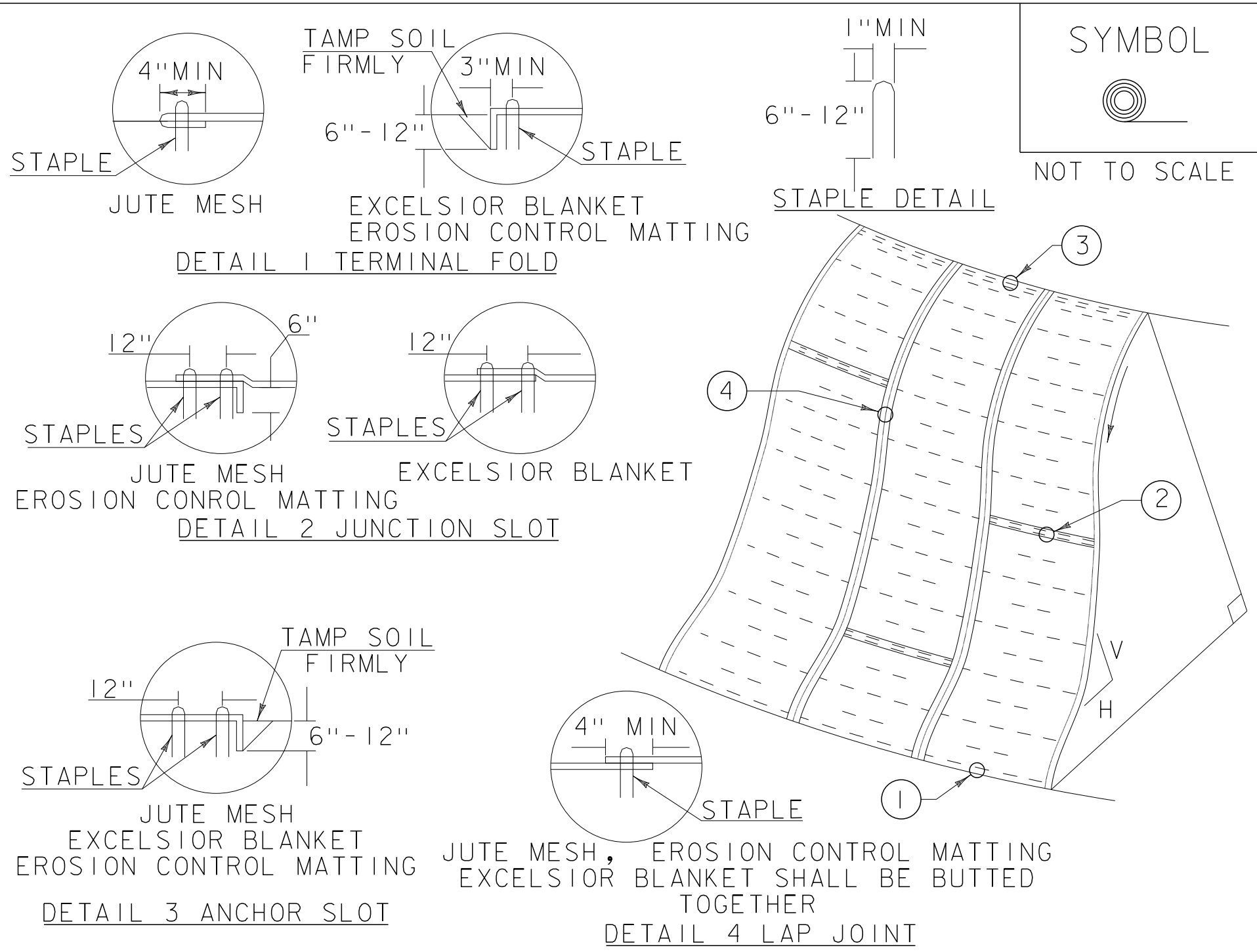
- USE 2" TO 3" STONE. FILTERING STONE SHALL BE 3/4".
- PLACE STONE OVER GEOTEXTILE.
- ONCE THE AREAS UPSTREAM FROM THE CHECK DAM ARE STABILIZED WITH VEGETATION, THE SEDIMENT TRAPPED BEHIND THE DAM SHALL BE DISPOSED OF IN AN APPROVED WASTE AREA.
- THE CHECK DAM(S) SHALL BE FLATTENED AND GRADED IN A MANNER WHICH PROTECTS THE AREA FROM EROSION AND CHANNEL BLOCKAGE . (GEOTEXTILE MUST BE REMOVED).
- THE GEOTEXTILE MUST BE DISPOSED OF APPROPRIATELY.
- THE AREA CONTRIBUTING TO THE CHECK DAM SHALL NOT EXCEED 4 ACRES.

ADAPTED FROM DETAILS PROVIDED BY: ILLINOIS USDA-NRCS  
ORIGINALLY DEVELOPED BY USDA-NRCS

PIPE INLET  
PROTECTION

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH  
SECTION 653 FOR INLET PROTECTION DEVICE, TYPE I (PAY  
ITEM 653.40).

REVISIONS		
MARCH 6, 2008	WHF	
JANUARY 13, 2009	WHF	



CONSTRUCTION SPECIFICATIONS

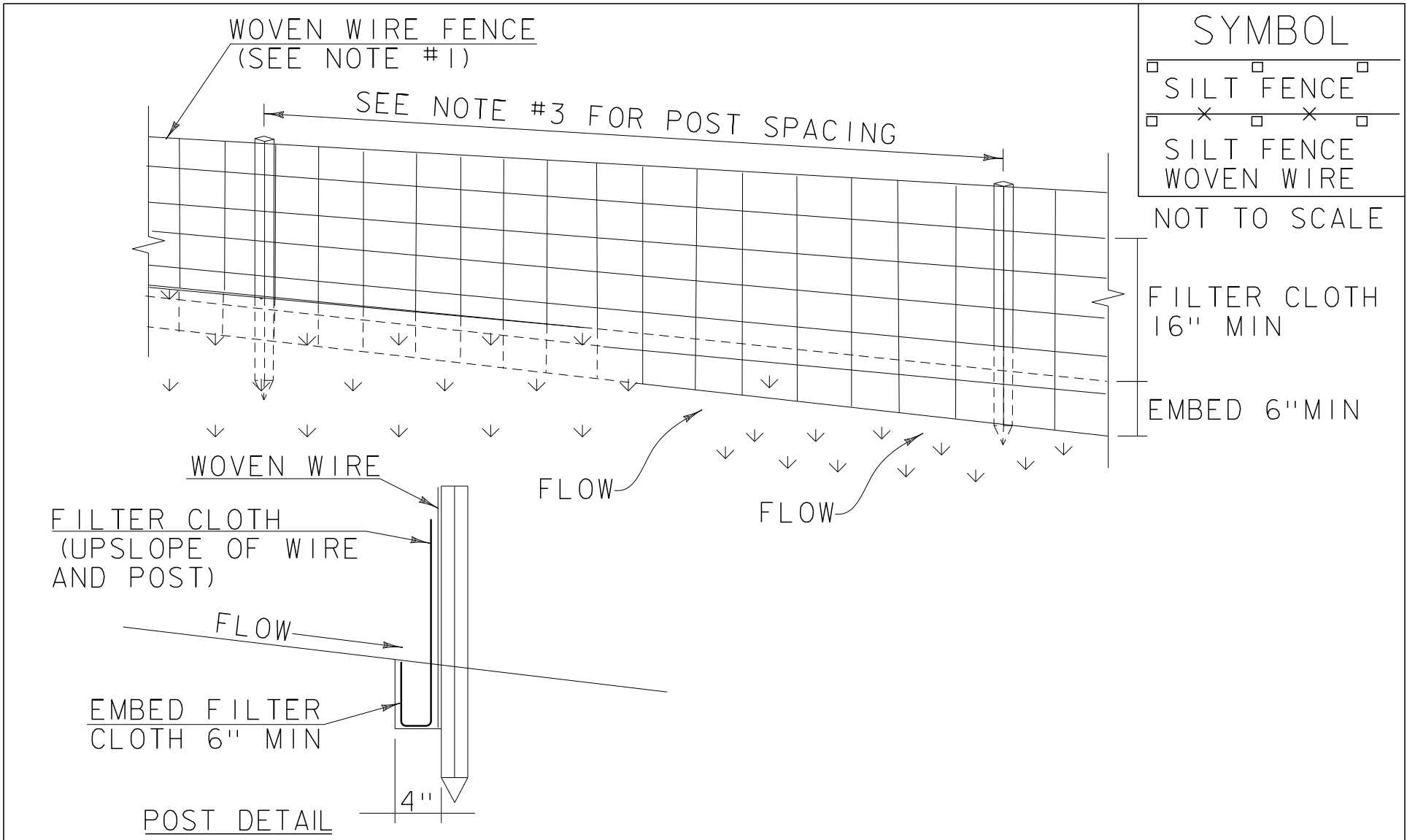
- APPLY TO SLOPES GREATER THAN 3H:1V OR WHERE NECESSARY TO AID IN ESTABLISHING VEGETATION.
- APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
- STAPLES ARE TO BE PLACED ALTERNATELY, IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4' X 225' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4' X 150' ROLL OF MATERIAL.
- DISTURBED AREAS SHALL BE SMOOTHLY GRADED. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.
- ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC  
ORIGINALLY DEVELOPED BY USDA-NRCS  
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

ROLLED EROSION  
CONTROL PRODUCT  
(RECP) SIDE SLOPE

NOTES:  
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR  
EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM  
THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL  
GUIDANCE.  
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION  
653 AND AS SHOWN IN THE PLANS FOR TEMPORARY EROSION  
MATTING (PAY ITEM 653.20) OR PERMANENT EROSION MATTING  
(PAY ITEM 653.21).

REVISIONS		
APRIL 16, 2007	JMF	
JANUARY 13, 2009	WHF	



CONSTRUCTION SPECIFICATIONS

- WOVEN WIRE REINFORCED FENCE IS REQUIRED WITHIN 100' UPSLOPE OF RECEIVING WATERS WHEN THE PROJECT FALLS UNDER A CONSTRUCTION STORMWATER PERMIT. WOVEN WIRE SHALL BE A MIN. 14 GAUGE WITH A 6" MAX. MESH OPENING.
- FILTER CLOTH SHALL BE EITHER FILTER X, MIRAF1100X, STABILINKA T140N OR APPROVED EQUIVALENT.
- POST SPACING FOR WIRE-BACKED FENCE SHALL BE 10' MAXIMUM. FOR FILTER-CLOTH FENCE, WHEN ELONGATION IS >50%, POST SPACING SHALL NOT EXCEED 4' AND WHEN ELONGATION IS <50%, POST SPACING SHALL NOT EXCEED 6'.
- WOVEN WIRE FENCE IS TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES. FILTER CLOTH IS TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
- WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY 6" AND FOLDED.
- MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN SEDIMENT REACHES HALF OF FABRIC HEIGHT.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC  
ORIGINALLY DEVELOPED BY USDA-NRCS  
VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SILT FENCE

NOTES:  
REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR  
EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM  
THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL  
GUIDANCE.

THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH  
SECTION 649 AND AS SHOWN IN THE PLANS FOR GEOTEXTILE  
FOR SILT FENCE (PAY ITEM 649.51) OR GEOTEXTILE FOR  
SILT FENCE, WOVEN WIRE REINFORCED (PAY ITEM 649.515).

REVISIONS		
MARCH 21, 2008	WHF	
DECEMBER 11, 2008	WHF	
JANUARY 13, 2009	WHF	

PROJECT NAME: LINCOLN

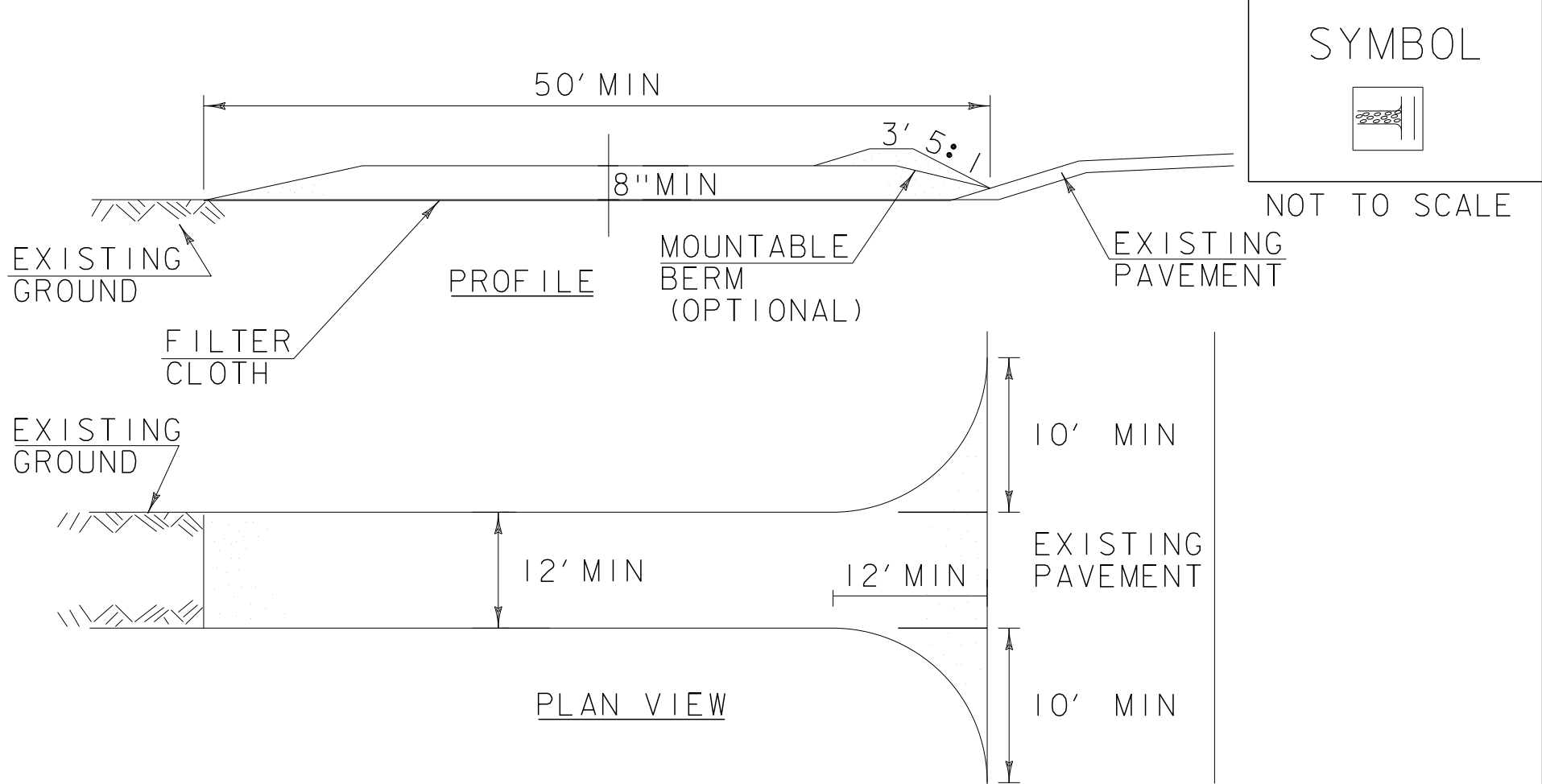
PROJECT NUMBER: BRF 0188 (8)



PARSONS BRINCKERHOFF  
650 ELM STREET  
MANCHESTER, NH 03101

FILE NAME: x10j066epscode.t.dgn  
PROJECT LEADER: G.K.DONINGTON  
DESIGNED BY: C CARNEY  
EPSC DETAILS (1)

PLOT DATE: 8-DEC-2014  
DRAWN BY: C CARNEY  
CHECKED BY: R BENJAMIN  
SHEET 55 OF 62



CONSTRUCTION SPECIFICATIONS

- 1.STONE SIZE- USE 1-4" STONE , RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
- 2.LENGTH- NOT LESS THAN 50' (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30' MINIMUM LENGTH APPLIES).
- 3.THICKNESS- NOT LESS THAN 8".
- 4.WIDTH- 12' MINIMUM , BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. 24' IF SINGLE ENTRANCE TO SITE.
- 5.GEOTEXTILE MUST BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING STONE.
- 6.SURFACE WATER- ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL , A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
- 7.MAINTENANCE- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY , ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
- 8.WHEN WASHING IS REQUIRED , IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
- 9.PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED ACCORDING TO PERMIT REQUIREMENTS.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC ORIGINALLY DEVELOPED BY USDA-NRCS VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION	STABILIZED CONSTRUCTION ENTRANCE												
NOTES: REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.													
THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 FOR VEHICLE TRACKING PAD (PAY ITEM 653.35) OR AS SPECIFIED IN THE CONTRACT.													
<table><tr><td colspan="2">REVISIONS</td></tr><tr><td>MARCH 24, 2008</td><td>WHF</td></tr><tr><td>JANUARY 13, 2009</td><td>WHF</td></tr><tr><td colspan="2"> </td></tr><tr><td colspan="2"> </td></tr><tr><td colspan="2"> </td></tr></table>		REVISIONS		MARCH 24, 2008	WHF	JANUARY 13, 2009	WHF						
REVISIONS													
MARCH 24, 2008	WHF												
JANUARY 13, 2009	WHF												

VAOT RURAL AREA MIX					
	LBS/AC				
% WEIGHT	BROADCAST	HYDROSEED	NAME	GERM %	PURITY %
37.5%	22.5	45	CREeping RED FESCUE	85%	98%
37.5%	22.5	45	TALL FESCUE	90%	95%
5.0%	3	6	RED TOP	90%	95%
15.0%	9	18	BIRDSFOOT TREFOIL	85%	98%
5.0%	3	6	ANNUAL RYE GRASS	85%	95%
100%	60	120			

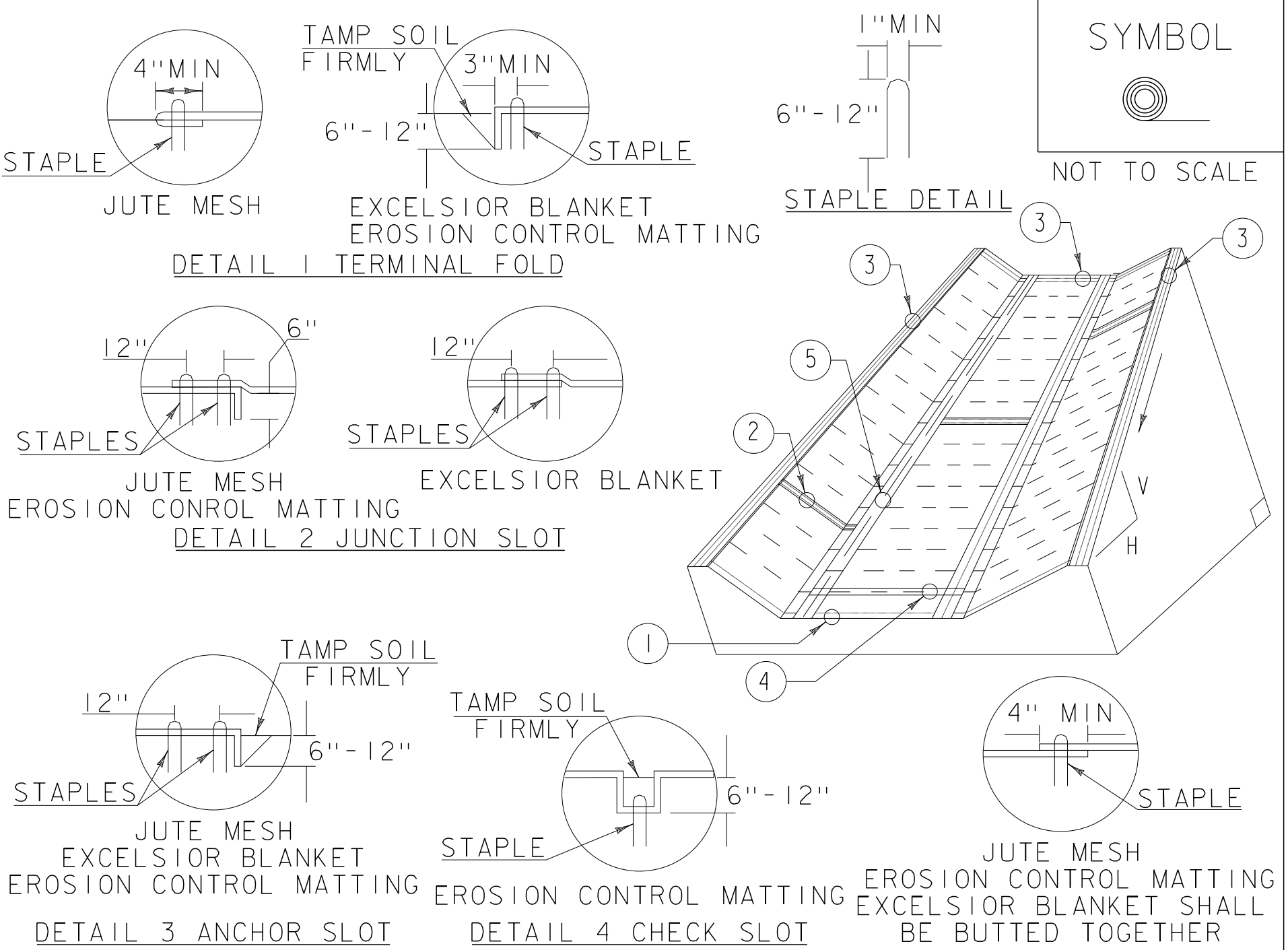
VAOT URBAN AREA MIX					
	LBS/AC				
% WEIGHT	BROADCAST	HYDROSEED	NAME	GERM %	PURITY %
42.5%	34	68	CREeping RED FESCUE	85%	98%
10.0%	8	16	PERENNIAL RYE GRASS	90%	95%
42.5%	34	68	KENTUCKY BLUE GRASS	85%	85%
5.0%	4	8	ANNUAL RYE GRASS	85%	95%
100%	80	160			

SOIL AMENDMENT GUIDANCE			
FERTILIZER		LIME	
BROADCAST	HYDROSEED	BROADCAST	HYDROSEED
10-20-10	FOLLOW	PELLETIZED	FOLLOW
500 LBS/AC	MANUFACTURER	2 TONS/AC	MANUFACTURER

CONSTRUCTION GUIDANCE

- 1.RURAL SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED UPLAND (NON WETLAND) AREAS DISTURBED BY THE CONTRACTOR.
- 2.URBAN SEED MIX: USE AS INDICATED IN THE PLANS AND/OR FOR ALL ESTABLISHED LAWN AREAS DISTURBED BY THE CONTRACTOR.
- 3.ALL SEED MIXTURES: SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS SEED.
- 4.FERTILIZER AND LIMESTONE: SHALL FOLLOW RATES SHOWN ON PLAN OR AS DIRECTED BY THE ENGINEER
- 5.HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 2 TONS/ACRE , ACHIEVE 90% GROUND COVER OR AS DIRECTED BY THE ENGINEER.
- 6.TOPSOIL: TO BE USED WITH SEED AS INDICATED ON THE PLANS , OR AS DIRECTED BY THE ENGINEER.
- 7.HYDROSEEDING: ALTHOUGH GUIDANCE IS GIVEN ABOVE THE SITE CONDITIONS AND THE TYPE OF HYDROSEED WILL ULTIMATELY DICTATE THE AMOUNTS AND TYPES OF SOIL AMENDMENTS TO BE APPLIED
- 8.TURF ESTABLISHMENT: PLACING SEED, FERTILIZER, LIME AND MULCH PRIOR TO SEPTEMBER 15 AND AFTER APRIL 15 CAN BETTER ENSURE A VIGOROUS GROWTH OF GRASS.

ADAPTED FROM VTRANS TECHNICAL LANDSCAPE MANUAL FOR ROADWAYS AND TRANSPORTATION FACILITIES		TURF ESTABLISHMENT	
		REVISIONS	
		JUNE 23, 2009	
		WHF	
		JANUARY 15, 2010	
		WHF	
		FEBRUARY 16, 2011	
		WHF	



CONSTRUCTION SPECIFICATIONS

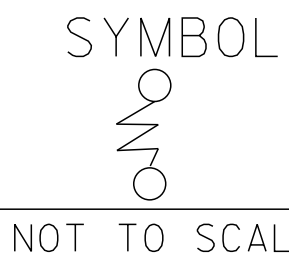
- 1.EROSION MATTING, CHECK SLOTS, SHALL BE SPACED IN DITCH CHANNEL SO THAT ONE OCCURS WITHIN EACH 50' ON SLOPES OF MORE THAN 4% AND LESS THAN 6%. ON SLOPES OF 6% OR MORE , THEY SHALL BE SPACED SO THAT ONE OCCURS WITHIN EACH 25'.
- 2.APPLY FERTILIZER, LIME SEED PRIOR TO PLACING MATTING.
- 3.STAPLES ARE TO BE PLACED ALTERNATELY , IN COLUMNS APPROXIMATELY 2' APART AND IN ROWS APPROXIMATELY 3' APART. APPROXIMATELY 175 STAPLES ARE REQUIRED PER 4'X225' ROLL OF MATERIAL AND 125 STAPLES ARE REQUIRED PER 4'X150' ROLL OF MATERIAL.
- 4.DISTURBED AREAS SHALL BE SMOOTHLY GRADED. EROSION CONTROL MATERIAL SHALL BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH.
5. ALL TERMINAL ENDS AND TRANSVERSE LAPS SHALL BE STAPLED AT APPROXIMATELY 12" INTERVALS.

ADAPTED FROM DETAILS PROVIDED BY: NEW YORK STATE DEC ORIGINALLY DEVELOPED BY USDA-NRCS VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION	ROLLED EROSION CONTROL PRODUCT (RECP) DITCH
NOTES: REFER TO "THE VERMONT STANDARDS & SPECIFICATIONS FOR EROSION PREVENTION & SEDIMENT CONTROL -2006- "FROM THE VT AGENCY OF NATURAL RESOURCES FOR ADDITIONAL GUIDANCE.  THIS WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 653 AND AS SHOWN IN THE PLANS FOR TEMPORARY EROSION MATTING (PAY ITEM 653.20) OR PERMANENT EROSION MATTING (PAY ITEM 653.21).	
REVISIONS	
MARCH 8 , 2007	JMF
APRIL 16 , 2007	WHF
JANUARY 13 , 2009	WHF

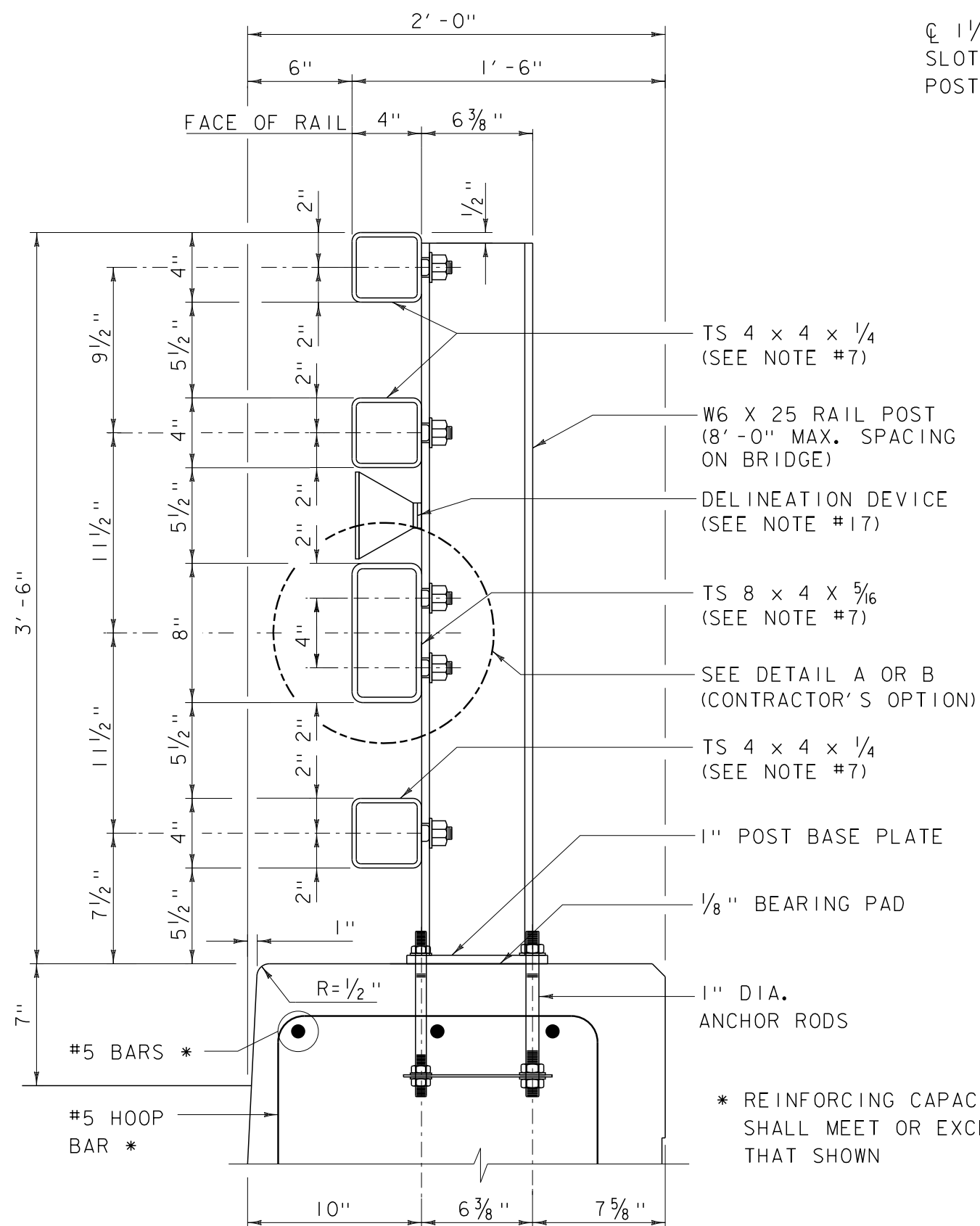
PROJECT NAME: LINCOLN  
PROJECT NUMBER: BRF 0188 (8)

FILE NAME: z10j066espcdet.dgn  
PROJECT LEADER: G.K.DONINGTON  
DESIGNED BY: C CARNEY  
EPSC DETAILS (2)

PLOT DATE: 8-DEC-2014  
DRAWN BY: C CARNEY  
CHECKED BY: R BENJAMIN  
SHEET 56 OF 62

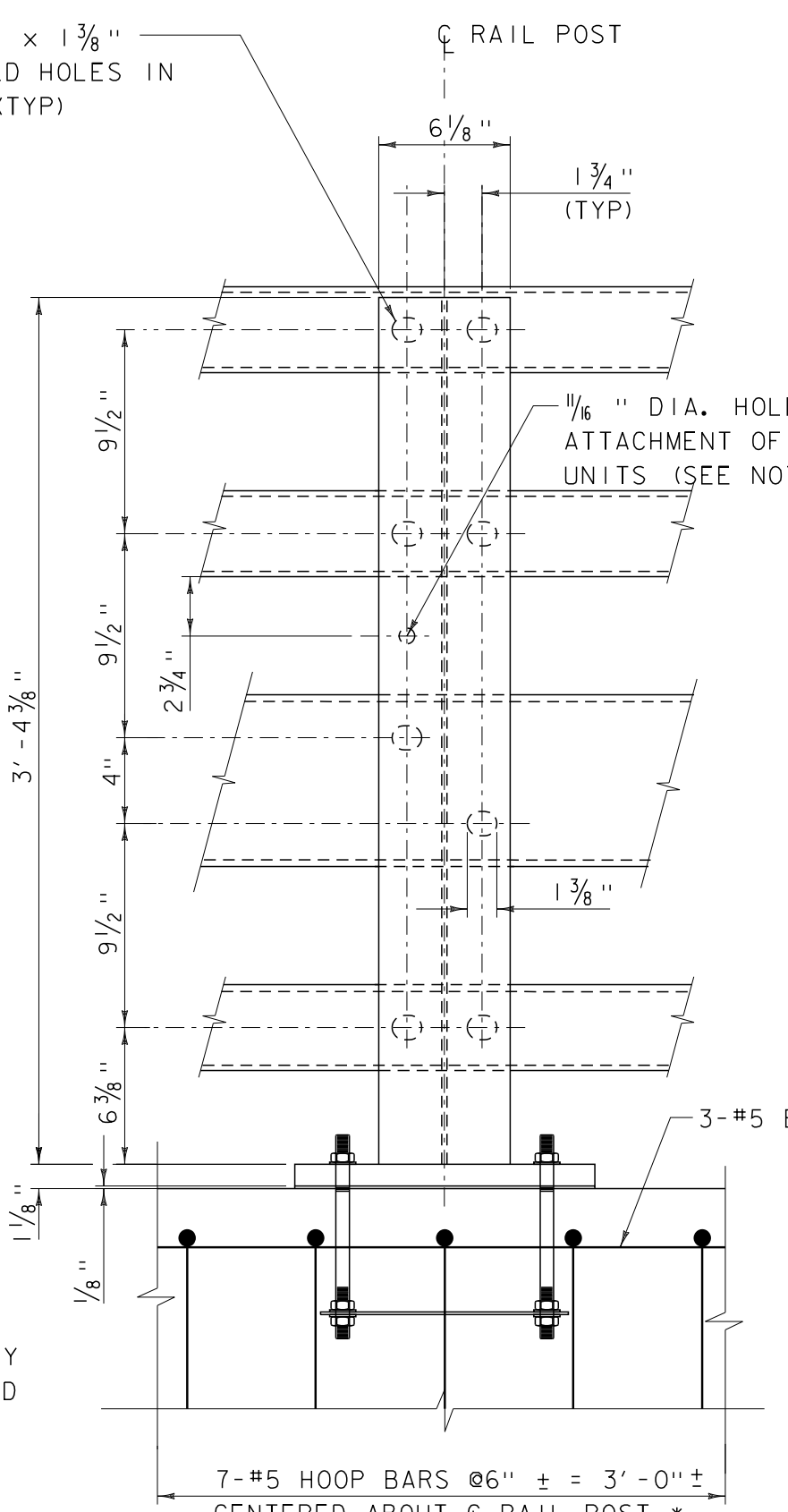




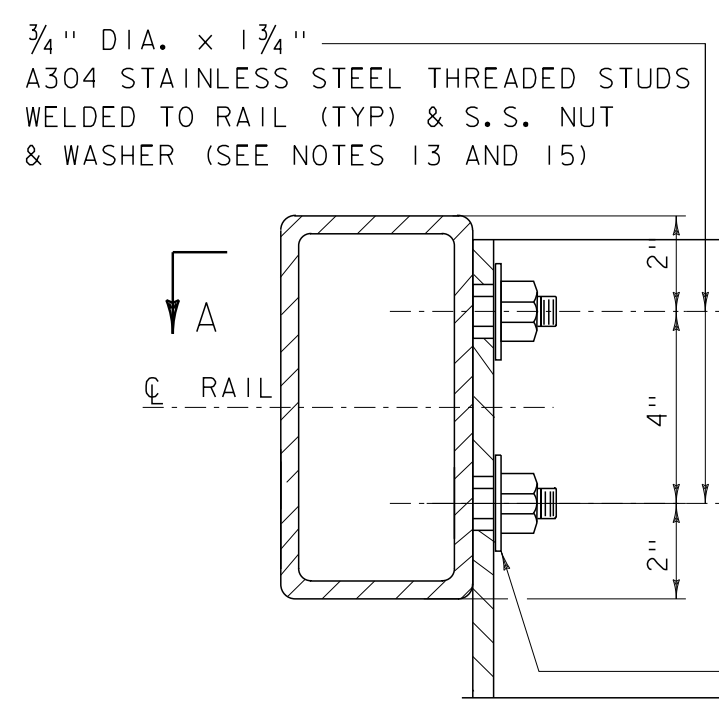


SECTION

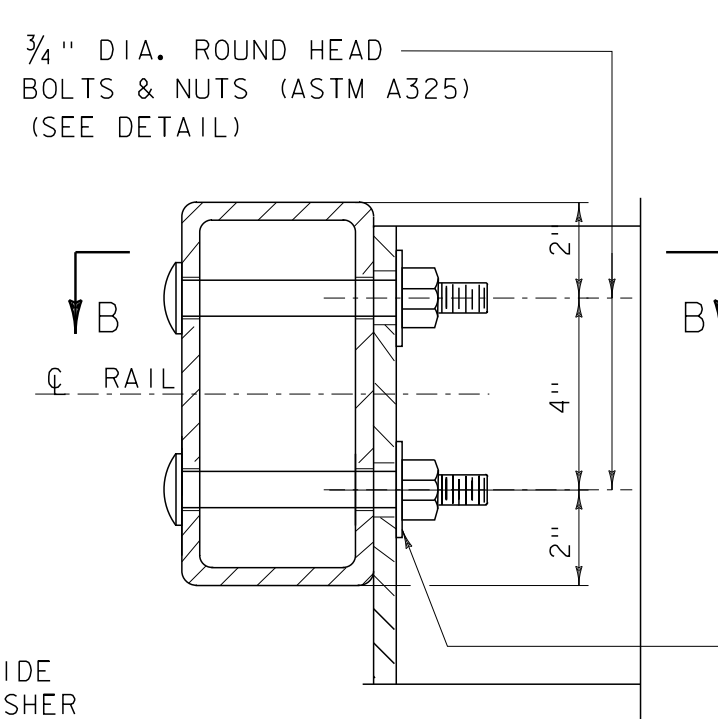
RAIL POST DETAILS  
SCALE: 1 1/2" = 1'-0"



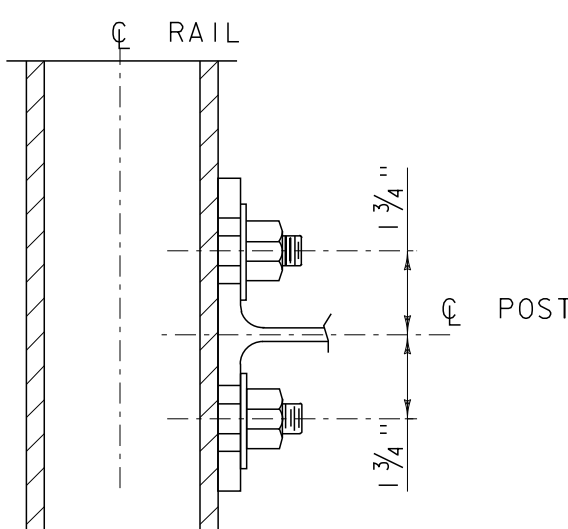
BACK ELEVATION



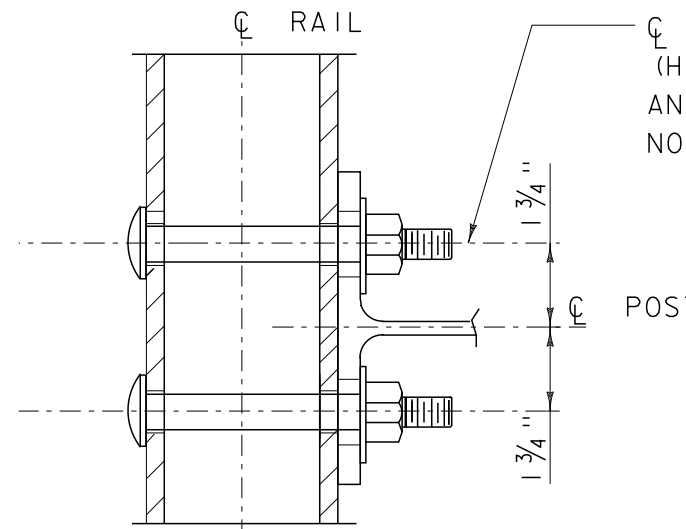
DETAIL A  
SCALE: 3" = 1'-0"



DETAIL B  
SCALE: 3" = 1'-0"



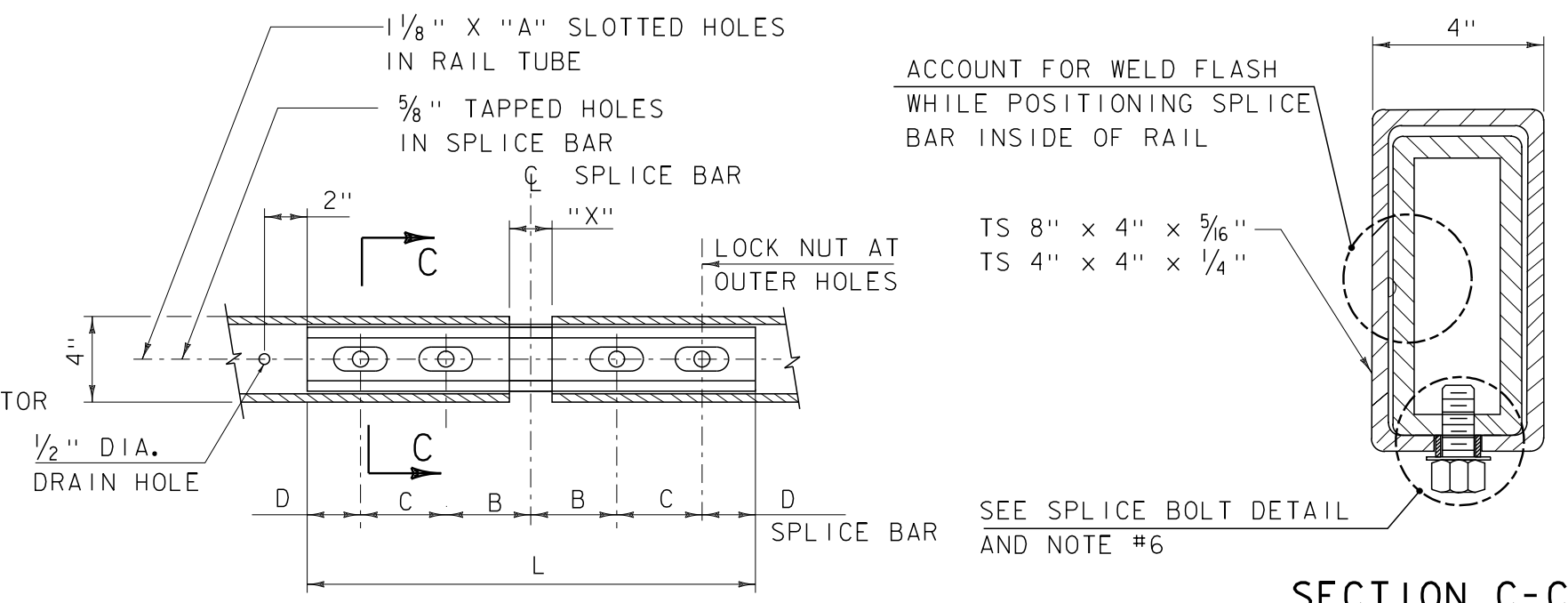
SECTION A-A  
SCALE: 3" = 1'-0"



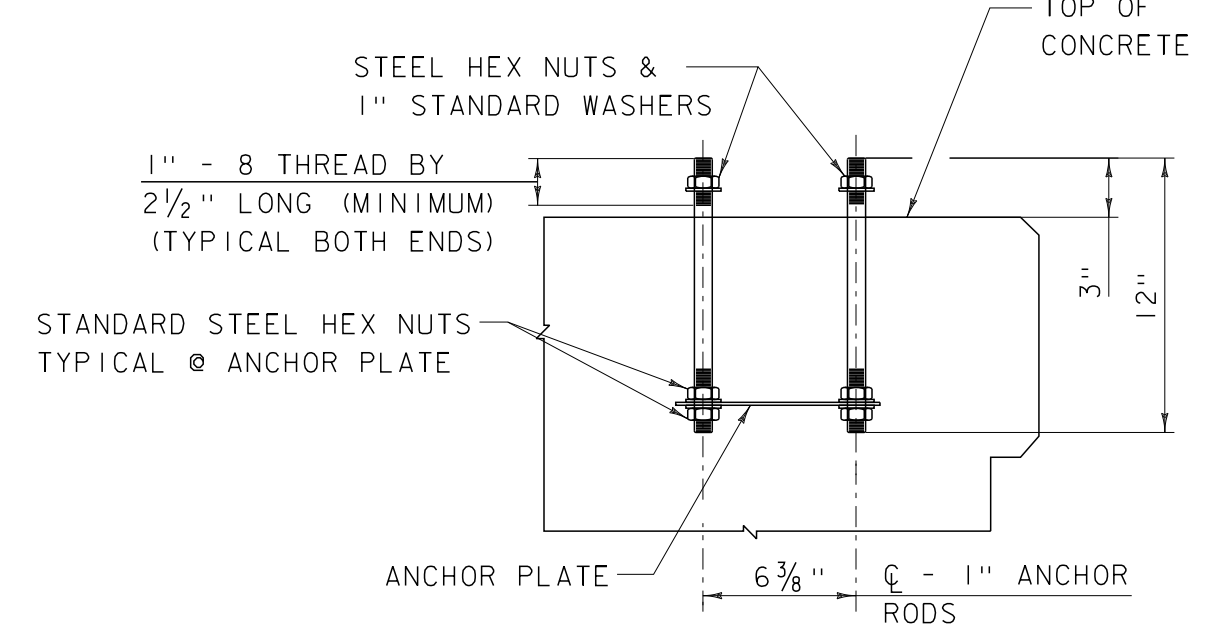
SECTION B-B  
SCALE: 3" = 1'-0"

SPLICE BAR DIMENSION TABLE						
T	A	B	C	D	X	L
INTERIOR	2 1/2"	4"	4"	2"	3/4"	1'-8"
* ≤ 3/4"	2 1/2"	4"	4"	2"	2"	1'-8"
* 3/4" < T < 5/4"	3 1/2"	5"	5"	2 1/2"	3"	2'-1"

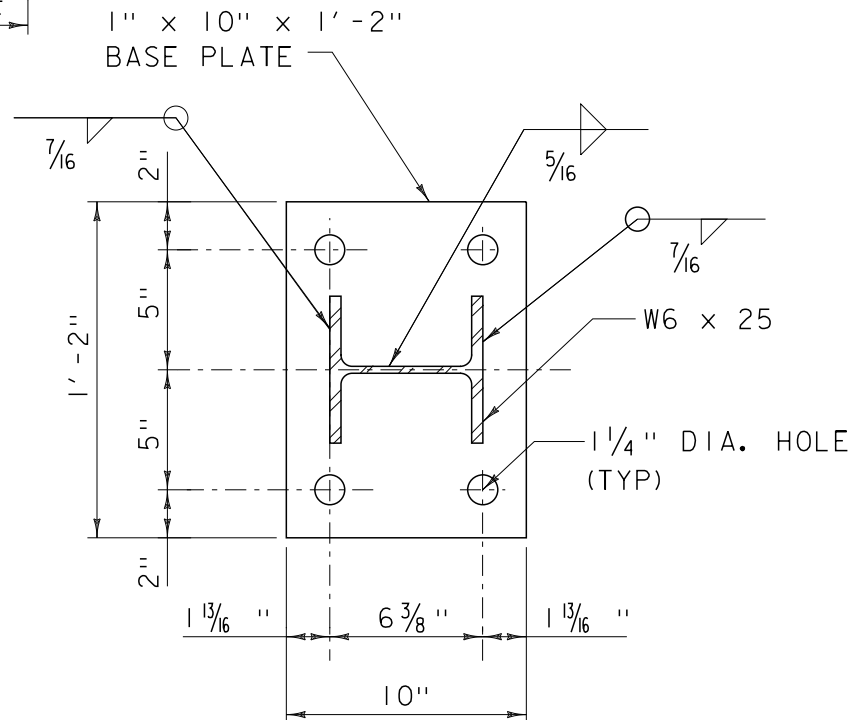
T = TOTAL MOVEMENT OF BRIDGE  
* = END SPLICE BAR



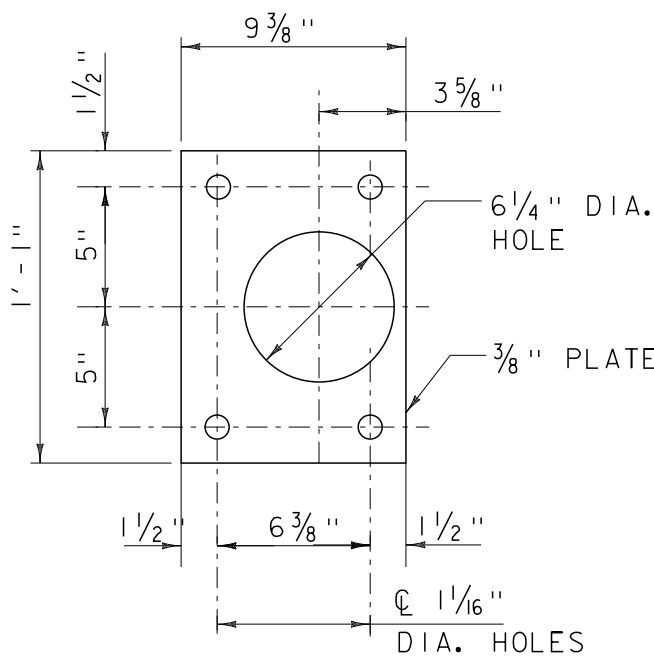
RAIL SPLICE (BOTTOM VIEW)  
SCALE: 1 1/2" = 1'-0"



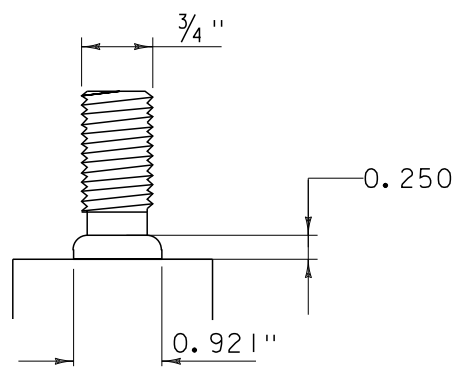
POST ANCHOR ASSEMBLY  
SCALE: 1 1/2" = 1'-0"



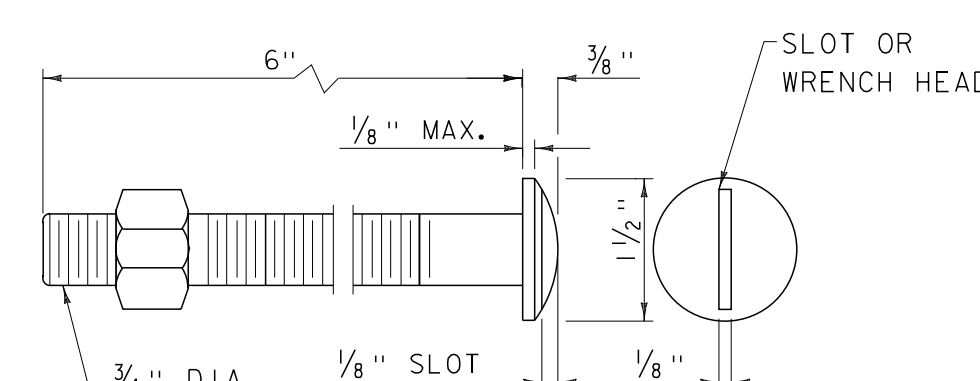
POST BASE PLATE  
SCALE: 1 1/2" = 1'-0"



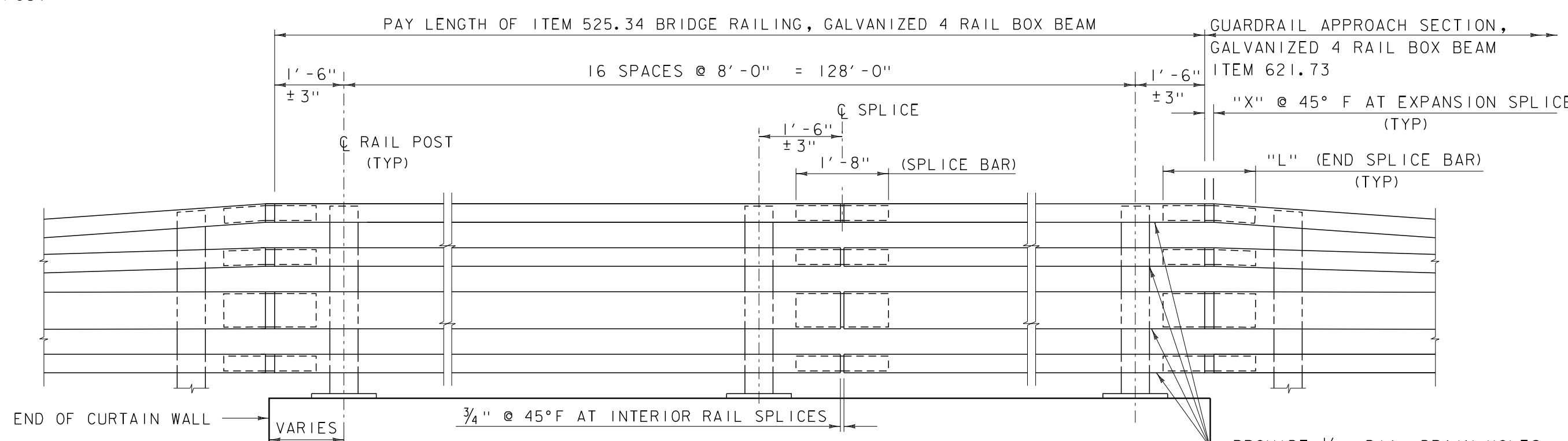
ANCHOR PLATE  
SCALE: 1 1/2" = 1'-0"



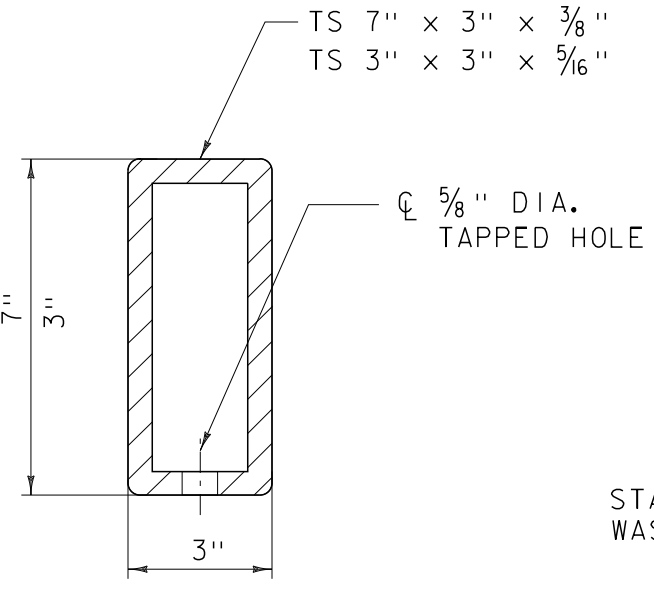
STUD WELD DETAIL  
SCALE: 6" = 1'-0"



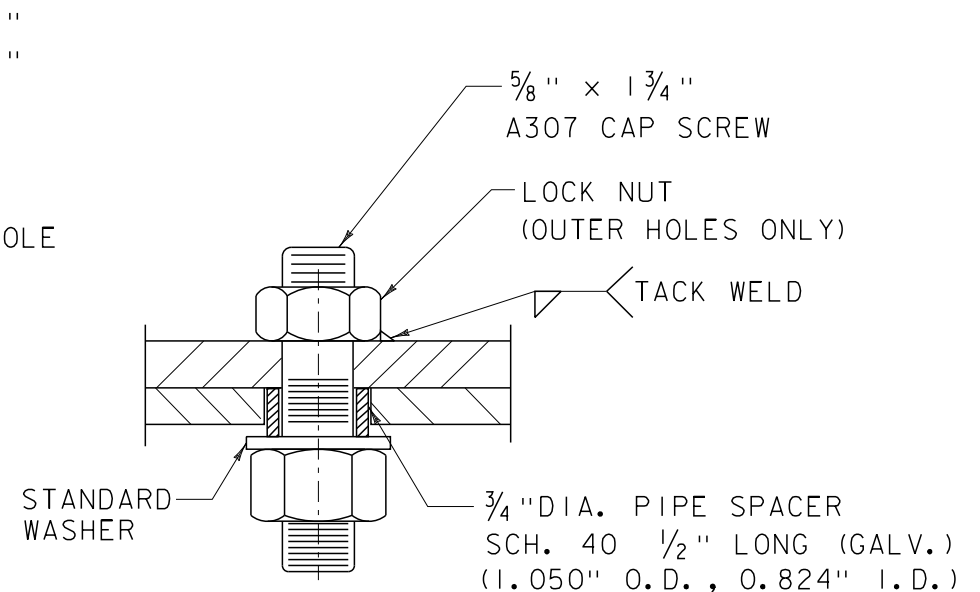
A325 ROUND HEAD BOLT DETAIL  
SCALE: 6" = 1'-0"



RAIL ELEVATION  
SCALE: 1/2" = 1'-0"



SPLICE BAR SECTION



SPLICE BOLT DETAIL  
SCALE: 6" = 1'-0"

RAIL SPLICE DETAILS  
SCALE: 3" = 1'-0"

RAIL NOTES

- ITEM 525.34, BRIDGE RAILING, GALVANIZED 4 RAIL BOX BEAM SHALL INCLUDE POSTS, BASE PLATES, ANCHOR PLATES, ANCHOR RODS, PREFORMED PADS, RAIL ASSEMBLY BOLTS, NUTS, WASHERS, STUDS, STRUCTURAL TUBING, SPLICE BARS, PIPE SPACERS, ALL APPURTENANCES, AND GALVANIZING.
- BRIDGE RAIL POSTS SHALL BE SET NORMAL (90 DEGREES) TO THE PROFILE GRADE, EXCEPT ON GRADES OVER 5% WHERE POSTS SHALL BE SET VERTICAL.
- ENDS OF RAIL TUBE SECTIONS SHALL BE SAWED OR MILLED AND SHALL BE TRUE AND SMOOTH. ALL CUT EDGES OF ALL MATERIAL SHALL BE GROUND SMOOTH.
- EACH PIECE OF RAIL TUBING SHALL BE ATTACHED TO A MINIMUM OF THREE (3) POSTS.
- BOLT HOLES SHALL BE DRILLED OR PUNCHED. FLAME CUTTING MAY BE USED TO FINISH SLOTTED HOLES IF MECHANICALLY GUIDED.
- AT INTERIOR SPLICES, PIPE SPACERS SHALL BE USED ON ONLY ONE SIDE OF THE SPLICE TO ALLOW MOVEMENT ON THAT SIDE. ALL RAILS IN A SPLICE SHALL RECEIVE THE SAME TREATMENT. AT END SPLICES PIPE SPACERS SHALL BE USED ON BOTH SIDES OF THE SPLICE TO ALLOW MOVEMENT ON EACH SIDE.
- MILL OR SHOP TRANSVERSE WELDS SHALL NOT BE PERMITTED ON ANY RAIL ELEMENT. RAIL ELEMENTS USED ON CURVES SHALL USE 3/8" WALL TUBES AND SHALL BE SHOP FORMED TO THE REQUIRED CURVATURE.
- NO PUNCHING, DRILLING, CUTTING OR WELDING SHALL BE PERMITTED AFTER GALVANIZING, EXCEPT AS ALLOWED IN DETAILS A AND B. DAMAGED AREAS OF GALVANIZING SHALL BE THOROUGHLY CLEANED, PRETREATED, AND PAINTED WITH TWO COATS OF ORGANIC ZINC-RICH GALVANIZING REPAIR PAINT, HAVING MIN. 94% ZINC BY WEIGHT, TO A THICKNESS EQUAL TO THE ORIGINAL COATING ACCORDING TO THE STANDARD SPECIFICATIONS AND ASTM A780.
- NUTS FOR 1" DIA. THREADED ANCHOR RODS CONNECTING THE BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8 TURN.
- THREADS FOR ANCHOR RODS MAY BE ROLLED OR CUT. IF CUT THREADS ARE USED, BOLT DIAMETER SHALL NOT BE LESS THAN NOMINAL DIAMETER. IF ROLLED THREADS ARE USED, ROD DIAMETER SHALL NOT BE LESS THAN ROOT DIAMETER OF THREADS.

MATERIAL NOTES

- IN ACCORDANCE WITH SECTION 525 AND THE FOLLOWING:
- STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF SUBSECTION 714.11 (ASTM A500, GRADE B, STRUCTURAL STEEL TUBING.) RAIL TUBING SHALL MEET THE LONGITUDINAL CHARRY V-NOTCH REQUIREMENTS OF 15 FT. LBS. AT 0° F. FOR ASTM A500, GRADE B, THE TEST SAMPLES SHALL BE TAKEN AFTER FORMING THE TUBES. CHARRY V-NOTCH IS NOT REQUIRED FOR SPLICE TUBES.
  - RAIL POSTS AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A572 GR 50, EXCEPT ANCHOR PLATES MAY BE ASTM A36. SEE SUBSECTION 732.03.
  - THREADED STUDS AND MATCHING NUTS FOR RAIL-TO-POST ATTACHMENT (DETAIL A) SHALL CONFORM TO ASTM A276 TYPE 304, STAINLESS STEEL, AND SHALL BE TORQUE TESTED PER AWS D1.5, 7.7.1. DETAIL B BOLTS SHALL BE ASTM A325 OR A449. ALL OTHER BOLTS AND NUTS SHALL CONFORM TO ASTM A307 AND ASTM 563 GRADE A RESPECTIVELY OR BETTER, EXCEPT THAT ASTM A307 NUTS MAY BE USED ON THE BOTTOM OF ANCHOR ASSEMBLY. WASHERS SHALL BE HARDENED STEEL COMMERCIAL TYPE A PLAIN WIDE WASHERS AND SHALL MEET THE DIMENSIONAL REQUIREMENTS OF A.N.S.I. B18.22. ANCHOR RODS SHALL CONFORM TO ASTM A449 (SEE SUBSECTION 714.07).
  - IN ACCORDANCE WITH SUBSECTION 726.08 ALL STEEL COMPONENTS (EXCEPT STAINLESS) SHALL BE GALVANIZED AFTER FABRICATION IN CONFORMANCE TO AASHTO M232 (ASTM A153) AND AASHTO M111 (ASTM A123). THE GALVANIZING KETTLE SHALL HAVE 0.05 TO 0.09 PERCENT NICKEL. GALVANIZED SURFACES SHALL HAVE A UNIFORM APPEARANCE AND GALVANIZED MATERIAL SHALL BE PROPERLY STORED.
  - DETAIL A STUDS SHALL BE WELDED ON AFTER TUBES ARE GALVANIZED BY SPOT GRINDING OFF GALVANIZING, WELDING ON STUDS, THEN TOUCH UP GALVANIZING PER NOTE #8 ABOVE.
  - PREFORMED BEARING PADS (1/8" THICK) SHALL CONFORM TO AASHTO M251.
  - SEE STANDARD DRAWING G-1 FOR DETAILS OF DELINEATORS. A DELINEATOR SHALL BE INSTALLED AT 30 FOOT SPACING OR THE NEAREST POST. WHITE IS TO BE INSTALLED ON THE DRIVERS RIGHT. PAYMENT SHALL BE INCIDENTAL TO OTHER ITEMS.

PROJECT NAME: LINCOLN	
PROJECT NUMBER: BRF 0188 (8)	
FILE NAME: z10j066T4rail.dgn	PLOT DATE: 8-DEC-2014
PROJECT LEADER:	DRAWN BY:
DESIGNED BY:	CHECKED BY:
4 RAIL BOX BEAM BRIDGE RAIL	SHEET 58 OF 62

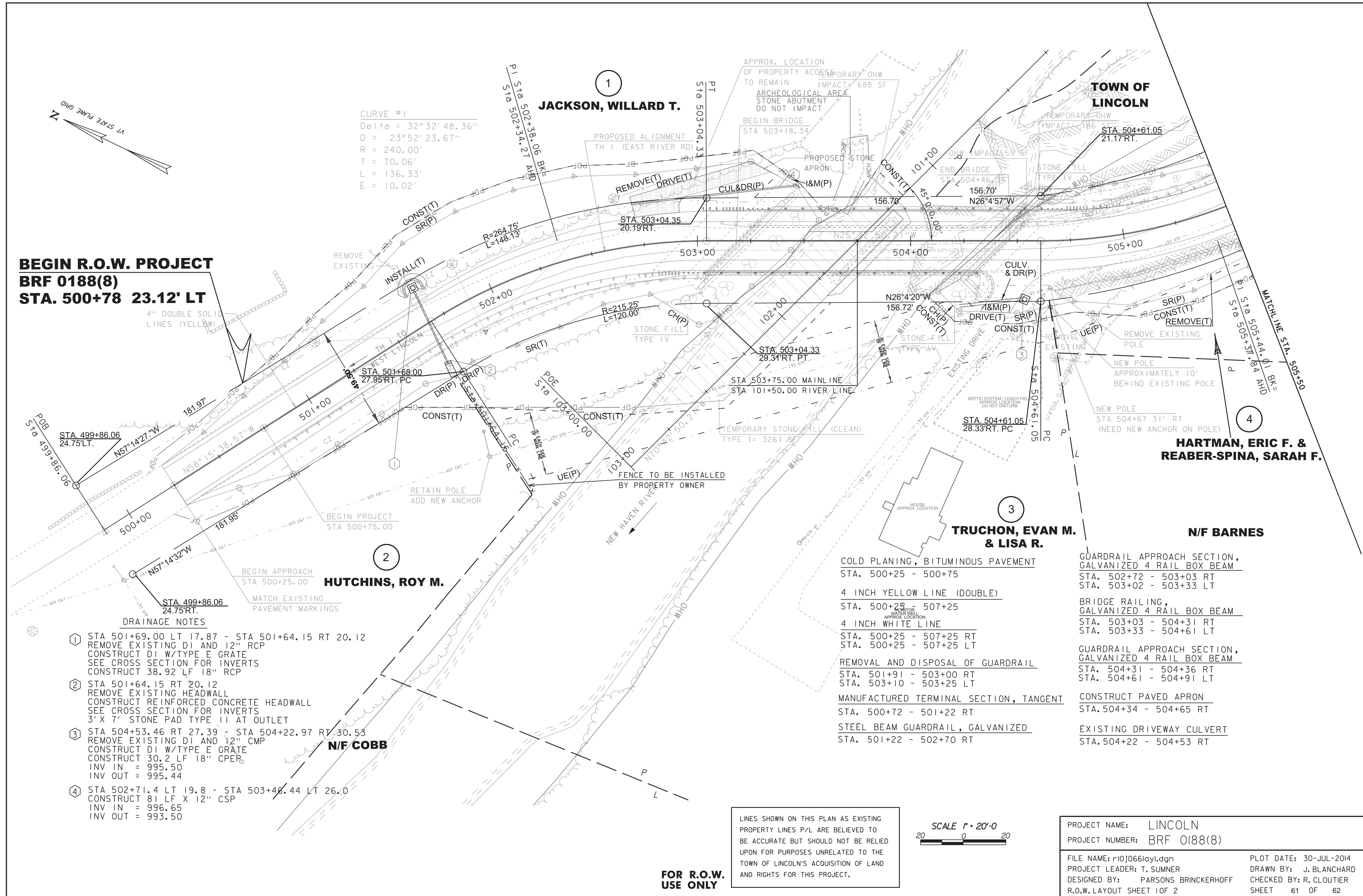












CURVE #1  
Delta = 32°32'48.36"  
D = 23°52'23.67"  
R = 240.00'  
T = 70.06'  
L = 136.33'  
E = 10.02'

**BEGIN R.O.W. PROJECT  
BRF 0188(8)  
STA. 500+78 23.12' LT**

4" DOUBLE SOLID  
LINES (YELLOW)

**DRAINAGE NOTES**

- ① STA 501+69.00 LT 17.87 - STA 501+64.15 RT 20.12  
REMOVE EXISTING DI AND 12" RCP  
CONSTRUCT DI W/TYPE E GRATE  
SEE CROSS SECTION FOR INVERTS  
CONSTRUCT 38.92 LF 18" RCP
- ② STA 501+64.15 RT 20.12  
REMOVE EXISTING HEADWALL  
CONSTRUCT REINFORCED CONCRETE HEADWALL  
SEE CROSS SECTION FOR INVERTS  
3' X 7' STONE PAD TYPE II AT OUTLET
- ③ STA 504+53.46 RT 27.39 - STA 504+22.97 RT 30.53  
REMOVE EXISTING DI AND 12" CMP  
CONSTRUCT DI W/TYPE E GRATE  
CONSTRUCT 30.2 LF 18" CPER  
INV IN = 995.50  
INV OUT = 995.44
- ④ STA 502+71.4 LT 19.8 - STA 503+46.44 LT 26.0  
CONSTRUCT 81 LF X 12" CSP  
INV IN = 996.65  
INV OUT = 993.50

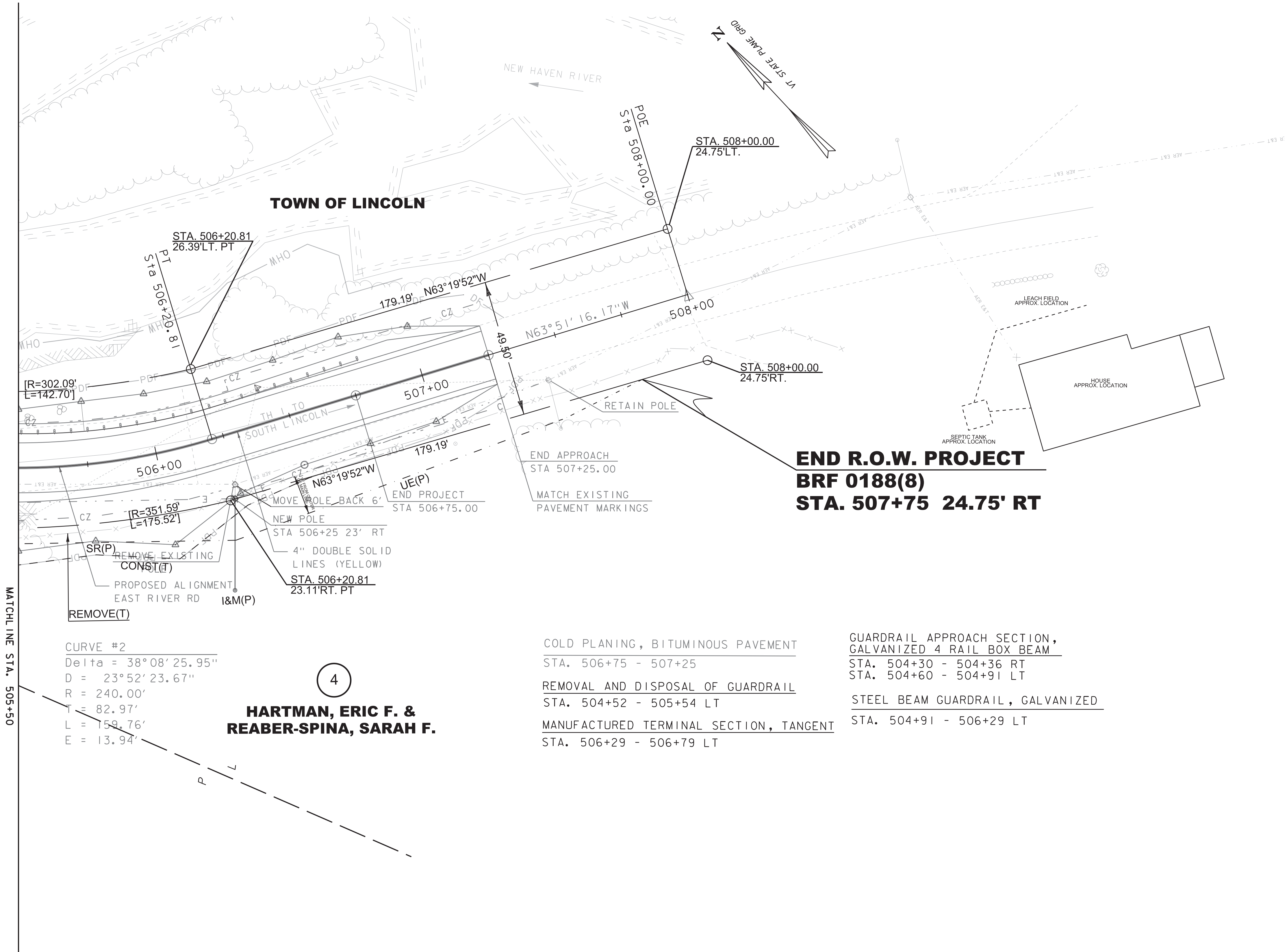
LINES SHOWN ON THIS PLAN AS EXISTING  
PROPERTY LINES P/L ARE BELIEVED TO  
BE ACCURATE BUT SHOULD NOT BE RELIED  
UPON FOR PURPOSES UNRELATED TO THE  
TOWN OF LINCOLN'S ACQUISITION OF LAND  
AND RIGHTS FOR THIS PROJECT.

SCALE 1" = 20'-0"  
20 0 20

PROJECT NAME: LINCOLN	
PROJECT NUMBER: BRF 0188(8)	
FILE NAME: r10j066lay.dgn	PLOT DATE: 30-JUL-2014
PROJECT LEADER: T. SUMNER	DRAWN BY: J. BLANCHARD
DESIGNED BY: PARSONS BRINCKERHOFF	CHECKED BY: R. CLOUTIER
R.O.W. LAYOUT SHEET 1 OF 2	SHEET 61 OF 62

**FOR R.O.W.  
USE ONLY**





CURVE #2  
Delta = 38°08'25.95"  
D = 23°52'23.67"  
R = 240.00'  
T = 82.97'  
L = 159.76'  
E = 13.94'

**HARTMAN, ERIC F. &  
REABER-SPINA, SARAH F.**

COLD PLANING, BITUMINOUS PAVEMENT

STA. 506+75 - 507+25

REMOVAL AND DISPOSAL OF GUARDRAIL

STA. 504+52 - 505+54 LT

MANUFACTURED TERMINAL SECTION, TANGENT

STA. 506+29 - 506+79 LT

GUARDRAIL APPROACH SECTION,  
GALVANIZED 4 RAIL BOX BEAM

STA. 504+30 - 504+36 RT

STA. 504+60 - 504+91 LT

STEEL BEAM GUARDRAIL, GALVANIZED

STA. 504+91 - 506+29 LT

**END R.O.W. PROJECT  
BRF 0188(8)  
STA. 507+75 24.75' RT**

LINES SHOWN ON THIS PLAN AS EXISTING  
PROPERTY LINES P/L ARE BELIEVED TO  
BE ACCURATE BUT SHOULD NOT BE RELIED  
UPON FOR PURPOSES UNRELATED TO THE  
TOWN OF LINCOLN'S ACQUISITION OF LAND  
AND RIGHTS FOR THIS PROJECT.

**FOR R.O.W.  
USE ONLY**

SCALE 1" = 20'-0"  
20 0 20

PROJECT NAME: LINCOLN  
PROJECT NUMBER: BRF 0188(8)

FILE NAME: r10j066lay2.dgn  
PROJECT LEADER: T. SUMNER  
DESIGNED BY: PARSONS BRINCKERHOFF  
R.O.W. LAYOUT SHEET 2 OF 2

PLOT DATE: 30-MAY-2014  
DRAWN BY: J. BLANCHARD  
CHECKED BY: R. CLOUTIER  
SHEET 62 OF 62